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Residential Rehabilitation Assistance Program Evaluation

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RESIDENTIAL REHABILITATION
ASSISTANCE PROGRAM EVALUATION

PROGRAM EVALUATION DIVISION
CANADA MORTGAGE AND HOUSING CORPORATION
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Canada Mortgage and Housing Corporation, the Federal Government's housing agency, is responsible for administering the National Housing Act.

This legislation is designed to aid in the improvement of housing and living conditions in Canada. As a result, the Corporation has interests in all aspects of housing and urban growth and development.

Under Part V of this Act, the Government of Canada provides funds to CMHC to conduct research into the social, economic and technical aspects of housing and related fields, and to undertake the publishing and distribution of the results of this research. CMHC therefore has a statutory responsibility to make widely available, information which may be useful in the improvement of housing and living conditions.

This publication is one of the many items of information published by CMHC with the assistance of federal funds.

EVALUATION OF THE RESIDENTIAL REHABILITATION ASSISTANCE PROGRAM

EXECUTIVE SUMMARY

The Residential Rehabilitation Assistance Program came into being, along with the Neighbourhood Improvement Program, in 1974, in response to an acknowledgement that older, deteriorated residential neighbourhoods were worth saving. After the demise of NIP in 1979, RRAP continued to be directed to the rehabilitation of housing, with an emphasis on ensuring an adequate supply of safe and affordable housing for lower-income Canadians. Over 250,000 housing units have been repaired through RRAP since 1974.

The dual emphasis of RRAP on the repair of substandard housing and the provision of assistance to residents in need are reflected in the stated objectives of the program and continue to be seen in the modifications to the program which have occurred over time.

The evaluation of RRAP was undertaken to measure the achievement of these objectives and to examine the role of specific program design features in the performance of the program. As well, broad impacts and effects of the program, both intended and unintended, have been investigated. In light of the findings of the analysis undertaken during the conduct of the evaluation, a number of alternative program design and delivery proposals were put forth in an effort to identify potential means of enhancing the effectiveness and efficiency of the program.

The major conclusions of the evaluation are summarized in this section of the report.

Program Rationale:

Need for Rehabilitation:

Over one million dwelling units or 13 percent of all units in Canada were rated by their occupants as being in need of major repair. A further 1.25 million units or 15 percent were rated as being in need of minor repairs. While three-quarters of all dwellings in need of major repair are in urban areas, the incidence of need is greater in rural areas. Estimates of future need suggest a modest short term decrease in the number of dwellings in need of major repair followed by a substantial increase towards the end of the century, as the current stock of dwellings ages.

Need for Rehabilitation Assistance:

The need for rehabilitation extended over all income groups; it was not just low-income people who lived in dwellings in need of major repairs. The need was somewhat greater among low and moderate income households - 50 percent of the total need was found in the 40 percent of dwellings occupied by low and moderate income households.

Existing data shows that, as income decreases, generally a household pays a higher proportion of their income for shelter. Less is left over for other expenditures including necessary repairs to maintain their homes. While these low income households would be a potential target group for social housing assistance, a rehabilitation program such as RRAP, which extends the useful life of an existing dwelling, represents a far less costly alternative to existing social housing programs involving long-term subsidy costs.

Objectives Achievement:

Assistance to Residents:

RRAP is well-targeted to lower income households and RRAP recipients were found, on all measures, to be in greater need of assistance than the general population.

- The average income of RRAP recipients was substantially less than the average for the general population of households living in dwellings in need of major repair (\$5,000 less for homeowners, \$3,500 less for tenants).
- More than half of RRAP homeowner recipients had household incomes below the poverty threshold. A RRAP household was 2.5 times more likely to live below the poverty line than was a household in the general population. The program, however, was less successful in reaching the lowest income households - RRAP homeowner recipients below the poverty line had a higher average income than did all homeowner households below the poverty line.
- The average gross debt service ratio of RRAP homeowner recipients was 4 percentage points higher than the average for all homeowners. A RRAP household was twice as likely to have a high GDS ratio, over 30 percent, than was a non-RRAP household.
- While RRAP homeowner recipients had substantial amounts of accumulated equity, on average, in their dwelling, this was significantly less than that possessed by all homeowners, on average. Over one-half of RRAP homeowner recipients could have financed the cost of their repairs by borrowing

against their equity without reducing that equity to less than 25 percent of the value of their home or paying more than 30 percent of their income for shelter.

Improvement of Substandard Housing:

For homeowners, one-half of the dwellings inspected had at least one outstanding item which was in substandard condition. For rental units, 42 percent were in the same condition. The estimated average cost to repair these outstanding substandard items was about \$650, indicating that these were generally minor deficiencies.

Almost all of the outstanding substandard items were due to the absence of RRAP work to the item rather than to poor quality work done through the program. Incompleteness was more prevalent in homeowner units than in rental units. For homeowners, incomplete repairs were more often found among those with some repayable loan, rather than those receiving full forgiveness. This was particularly evident in rural areas although there was no significant difference in the incidence of incompleteness between urban and rural areas. The incidence of incompleteness and outstanding substandard items was significantly lower in Quebec.

On more specific measures of health and safety related items, a similar pattern of substandard and incomplete items was observed. For homeowner units, one-third contained substandard health related items and two-thirds contained substandard safety related items. Rental properties performed better on these measures, 27 percent for health and 44 percent for safety. In the opinion of the occupants, this is not a major problem as 90 percent felt that RRAP had had a positive effect on the health and safety of their dwelling.

Quality and Useful Life:

On the whole, the vast majority of repairs carried out under RRAP met acceptable quality standards of workmanship and materials. Some evidence of substandard work was found in 15 percent of the units. This was related primarily to poor quality workmanship, rather than to inappropriate materials. The incidence of dwellings with work quality problems was significantly greater in urban areas than in rural areas. No relationship was found between work quality problems and the use of sweat-equity by the property owners.

On a measure of potential threats to the useful life of the dwelling, no significant difference was found between dwellings RRAPed between 1975 and 1978 and dwellings RRAPed up to 6 years later. This suggests that the work which was done through RRAP has withstood at least some proof of time.

Maintenance Practices:

There has been an increase in the number of municipalities with Maintenance and Occupancy Standards, although available evidence suggests that only a small proportion of these are comprehensively administered. No direct link was found between their implementation and the requirement for M & O Standards as a condition of participation in RRAP.

At the individual level, the maintenance practices in both RRAP homeowner and rental units were good. RRAP homeowners, despite their low average incomes, spend as much on maintenance as does the average Canadian homeowner.

Program Design and Delivery:

Program Design - Homeowner:

The income limits used in the program to determine the type and amount of assistance available to homeowner applicants correspond generally to the first and second income quintile cutoffs (20 and 40 percent) of the general population. However, these limits do not equally treat applicants on a regional or urban/rural basis. In addition, the proportions of the population which the limits have qualified have changed over time. The effect is that the design limits of the program have decreased the ability of the program to meet the needs of the lowest income groups.

Program Design - RRAP Standards:

The design of the RRAP Standards was shown to impact on the achievement of the housing quality objectives of the program. The inclusion of non-essential work items at the expense of mandatory items could account for some of the incompleteness present after RRAP. Elements where the repair/replace decision can be difficult to make, showed the highest incidences of sub-standard ratings after RRAP. Sufficient skills and training are required for the effective use of the Standards and the identification of work to be done on the part of RRAP inspectors and administrators.

Program Design - Disabled:

Provisions for RRAP for the Disabled were introduced in 1981. By 1983, the disabled were being served under the program in proportion to their presence in the general population. No significant differences were found between disabled and non-disabled cases on measures of completeness and quality. While disabled clients were found to be less satisfied with the delivery of RRAP, the data does not fully represent the implementation of the RRAP for the Disabled provisions and increased assistance amounts for disabled access work.

Program Delivery - Budget Allocation:

The introduction of the Capital Budget Control Plan in 1980 has resulted in a gradual improvement in the targetting of Urban RRAP funds on the basis of need between 1979 and 1983. Rural RRAP funds were allocated fairly closely to repair need throughout the same period. In terms of the total RRAP budget, little change is evident in the alignment of the budget with repair need on an urban/rural basis. It is obvious that it is difficult to establish program resource allocations solely on the basis of the proportion of need for repair. A program such as RRAP is expected to respond to a variety of government objectives.

Program Delivery - Delivery Agents:

The evaluation found that program delivery was affected by the type of delivery agent. In particular, where the program was delivered by private firms, regional and provincial agencies and, to a lesser extent, municipal agencies, both dwelling condition and client satisfaction were rated higher. Loans delivered directly by CMHC offices and by native organizations consistently resulted in poorer dwelling condition and satisfaction, on most indicators measured. The poorer performance for loans delivered by CMHC and native organizations can, in part, be explained by the generally worse circumstances (condition, location, income) associated with these loans.

The analysis indicates that the current delivery fee structure may require some modification; however, the case study approach did not permit generalization to all delivery agents. The data showed that substantial variation exists in the costs incurred in delivering a RRAP loan. These differences are due to the amount of time spent per loan, transportation and salary costs, and number of loans delivered.

Program Delivery - Remote Areas:

Remote areas are generally under-served by the program in proportion to their population. This is particularly evident in Quebec and British Columbia. For those dwellings in remote areas which were RRAPed, the quality of the work was comparable to that in non-remote areas. Remote clients were generally satisfied with the program; however, they were less satisfied with the helpfulness of the inspectors and the speed in processing their loans.

Impacts and Effects:

Generation of Private Rehabilitation:

No evidence was found to prove that RRAP creates a "contagion effect" within the designated area; that is, that the existence of RRAP encourages property owners to rehabilitate privately. In fact, significantly less private rehabilitation was found to occur in RRAP areas than in comparable non-RRAP areas. However, RRAP recipients did rate their housing condition and neighbourhood quality very positively.

Occupant Displacement:

Analysis of Census mobility data for 1981 and 1971 revealed that the mobility rates in RRAP areas were not significantly different than the rates in comparable non-RRAP areas. One quarter of the RRAP tenants surveyed were new tenants within the preceding year; however, this is less than the annual mobility rate of 30 percent for all Canadian renters.

Landlords' Financial Status:

The evaluation found that the increases in rents charged to tenants of RRAPed units were generally in line with those required to cover the landlords' rehabilitation costs. This resulted in average rent increases after RRAP of 30 per cent. While these were not found to create excess profits for landlords, there was evidence of hardship for tenants. Over one third of the tenants remaining after RRAP perceived their rent increase to be a serious problem. No information was available from tenants who had left since the unit was RRAPed.

Rehabilitation Industry Impacts:

RRAP is an effective generator of jobs accounting for over 7,000 jobs in the rehabilitation industry in 1984. In some regions, the impact is as high as 20 percent of the total employment in rehabilitation. Rental RRAP is the most effective job creation tool as it results in private expenditures of \$2.58 for each \$1 of public funds.

Relationship with other Programs:

RRAP encourages the property owner to use other rehabilitation and related programs in addition to RRAP. Almost 50 percent of RRAP clients reported having used another assistance program in addition to RRAP; three-quarters of these used CHIP, one-quarter used COSP. On measures of dwelling condition, completeness and client satisfaction, few differences were found between

clients who used RRAP only and those who used RRAP plus some other program. Specifically, lower income households were better served by RRAP alone. The provincial stacking program in Quebec allowed lower income households to benefit and also rated higher on all measures of dwelling quality and completeness.

Energy Conservation:

RRAP has had a strong impact on promoting energy conservation, both alone and when stacked with other energy conservation assistance programs. Over 85 percent of RRAP recipients did some sort of energy conservation work. Over three-quarters of this work was funded through RRAP.

Alternatives:

Several alternatives pertaining to potential avenues of program improvement were examined. These were proposed in areas where the program objectives are not currently being met or where improvements are suggested.

The evaluation found that RRAP is generally well-targeted to lower income households. However, the lowest income households are not being adequately served. For many households, the program does not provide sufficient funds to complete the work, resulting in outstanding substandard items after RRAP. Additional funds would be required, either through re-directing existing funds or from alternative sources.

The evaluation found that many households with slightly higher incomes, particularly those with low housing costs and equity in their dwellings, are able to make some contribution towards the cost of the repairs to their dwelling. Several ways of encouraging homeowner contribution were investigated, including deferred payment loans, revolving funds and requirements for increased cash contribution.

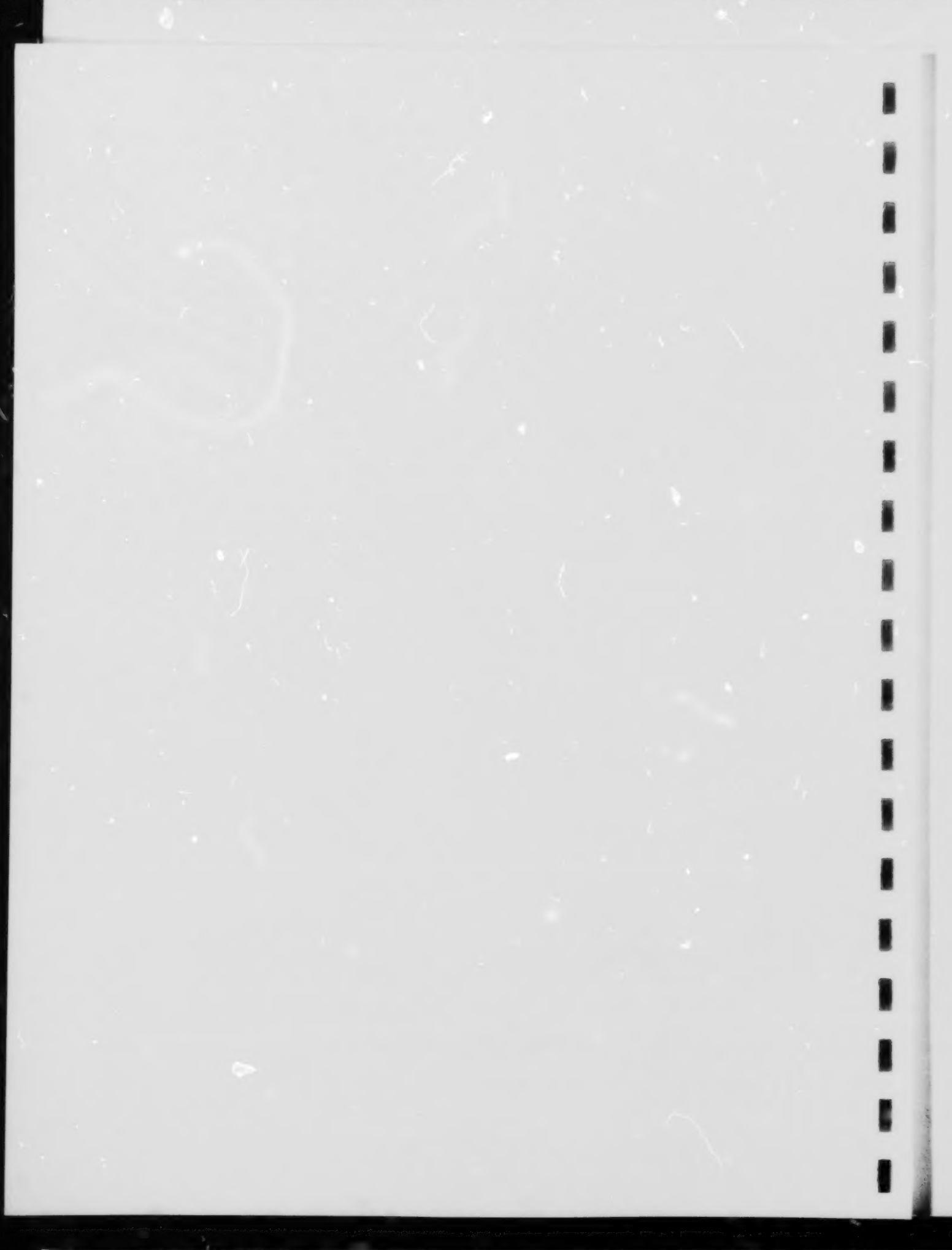
The evaluation found that a significant amount of mandatory work remained incomplete after RRAP. Increased emphasis on bringing all mandatory repairs up to standard could be achieved by limiting forgiveness to mandatory items, requiring significant mandatory repairs as a condition of RRAP funding or more closely monitoring and eliminating the delivery of partial RRAP. In any case, the evaluation revealed that modifications to the RRAP Standards would assist in more clearly specifying eligible items for funding and performance criteria for repairs.

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I. INTRODUCTION

Housing renovation¹ is becoming an increasingly important means of providing for the housing needs of Canadians. More and more, the 8.4 million dwellings currently accommodating the Canadian population are being rehabilitated, restored, adapted and improved to meet housing requirements and preferences. This increased focus on existing housing has been influenced by the appreciated value of the stock currently in place, its overall aging, the increasing costs of land and servicing required for new construction and changing patterns of population distribution within cities.

The federal government contributes to renovation activities through a number of programs. Key among them is the Residential Rehabilitation Assistance Program (RRAP) administered by Canada Mortgage and Housing Corporation. RRAP provides loans to owners of substandard housing units to undertake repairs. A portion of the loan is forgivable and does not have to be repaid². From 1974 to 1984, RRAP has assisted in the rehabilitation of over 250 000 units with loans of over 1 billion dollars committed of which 840 million dollars was in the form of forgivable (non-repayable) loans³.

In 1984, RRAP commitments totalled \$197.1 million (34 per cent of the Corporation's total commitments) of which \$165.8 million was expended as forgivable loans. Activity consisted of 48 102 units, divided almost evenly between urban and Rural RRAP. Two thirds of the units were owner-occupied and 25 per cent were rental. The remaining ten per cent were evenly divided between non-profit and on-reserve RRAP.

A. Evaluation Issues

The evaluation of RRAP has been conducted to assess the performance of the program since its introduction in 1973. It was scheduled as part of the on-going evaluation of CMHC programs. The format of the evaluation is consistent with the guidelines of the office of the Comptroller General on federal program evaluation. Within the federal government,

- ¹ Definitions of this and other renovation activities are contained in Figure 1.1.
- ² Chapter II contains a detailed description of the design, delivery and activity of the program.
- ³ Commitments included all funds authorized for loans and investments., Budgetary expenditures are advances in the form of grants, contributions and subsidies, which, in the case of RRAP, is the forgivable portion of the RRAP loan.

FIGURE 1.1

DEFINITIONS: REPAIR AND IMPROVEMENT WORK

The generic term for all kinds of repair and improvement is renovation. The following definitions classify the various types of renovation thus hopefully eliminating any confusion regarding the focus of the study:

Renovation: "Work undertaken on an existing housing structure for whatever purpose, motive or preference. Renovation work is the common denominator or generic term for all work done on an existing structure."

Rehabilitation: "Work undertaken to restore the safety and soundness of a dwelling as well as to prevent its diminishing utility and economic obsolescence."

Restoration: "Work undertaken on existing housing using materials and techniques which would replicate the original condition, purpose and design of a dwelling."

Conversion: "Work to modify the purpose or vocation of a building or to alter the number of dwelling units sheltered by it."

Repairs: "Work undertaken to restore the safety and soundness of an element or elements of a dwelling. Repairs in effect constitute elements of a rehabilitation project."

Maintenance: "Preventive work done to retain the initial characteristics of a dwelling in view of avoiding future deficiencies or repair needs."

program evaluation is viewed as an aid to decision making and management. It provides a source of information for resource allocation, program improvement and accountability. To this end it involves the systematic gathering of data on a program and evidence of its results.

An evaluation examines a wide range of issues which can be classified into four basic categories¹:

- . Program Rationale - Does the program make sense?;
- . Objectives Achievement - Has the program achieved what was expected?;
- . Impacts and Effects - What has happened as a result of the program?; and
- . Alternatives - Are there better ways of achieving the results?

The evaluation of RRAP addresses issues in each of these categories. The program rationale issues are examined in Chapter III of this report. They include the need for rehabilitation of the stock of existing dwelling units, the need for rehabilitation assistance for households and the continuing need for a public rehabilitation program. The rationale for government involvement in rehabilitation is assessed in terms of economic efficiency, social equity and other considerations.

The achievement of each of the four explicit program objectives is evaluated in Chapter IV. For each, the objective is operationalized by the identification of performance criteria and measurable indicators. Hypothesized relationships are tested using appropriate statistical analysis methods. The four objectives are:

- . To provide assistance to residents living in substandard housing on the basis of need;
- . To improve the substandard housing to an agreed level of health and safety;
- . To ensure that the quality of repair and improvement substantially extends the useful life of the dwelling; and
- . To promote an acceptable level of maintenance of the existing stock.

¹ Office of the Comptroller General, Guide on the Program Evaluation Function, 1981, p.7.

The relationship of several program design and delivery features to the achievement of the objectives is examined in Chapter V of the report. Design features examined include the homeowner income limits, the form and amount of assistance, the RRAP Standards, and RRAP for the Disabled. Delivery features include budget allocation, delivery agents and delivery in remote areas.

In Chapter VI, the impacts and effects of the program are evaluated. These include both intended and unintended effects and may have positive or negative implications on the performance of the program. The following impacts and effects are examined:

- . Housing condition;
- . Generation of private rehabilitation;
- . Occupant displacement;
- . Landlords' financial status;
- . Rehabilitation industry impacts;
- . Relationship with other programs; and
- . Energy conservation.

Alternative approaches to certain design and delivery features of the program are investigated in Chapter VII. These build on the analysis of the achievement of objectives and the implications of the current design and delivery features. Issues include more effective targetting of the program to low income households, alternate forms of assistance, universal access to the program and the identification of eligible work activities.

Chapter VIII contains a summary of the findings and conclusions of the evaluation.

B. Component Studies

A number of data collection activities and analytical studies were undertaken during the course of the evaluation. The object of this approach was to bring evidence to bear on the evaluation issues from different sources and through different methods to maximize the strengths of each. This would compensate for biases inherent in individual approaches and establish cross-validity.

a) Physical Inspections

Physical inspections of dwellings which had received RRAP funding were carried out by trained inspectors in the fall of 1982. The inspections were performed under contract to CMHC by SNC, Inc. of Montreal.

A sample of 3 940 units was selected which was stratified by location, tenure and current (1981) or historical (1974-78) status. Each unit was visited by an inspector who rated the condition of individual dwelling components and the quality of the work done under RRAP, and also estimated the cost of additional work if required. For the historical sub-sample, the quality of maintenance practices was rated as well. The rating instrument used in the study was designed and produced by EKOS Research Associates.

Inspections were successfully undertaken for 2 901 dwelling units, which represented a response rate of 74 per cent. Problems encountered for the remainder of the sample included an inability to contact occupants, inaccessible locations, incomplete or incorrect addresses and occupant refusals. Completed inspections consisted of 2 178 homeowner units and 723 rental units. Details regarding the physical inspection process are contained in the final report prepared by SNC, Inc.

The physical inspection data provide a "one-point-in-time" assessment of dwelling quality. While no inspection records are available on the pre-RRAP condition of the dwellings, it was assumed that they were substandard in at least one of six basic items, as this is a qualifying condition for entrance to the program.

b) Client Survey

A survey was conducted by mail of owners/residents of dwelling units rehabilitated under RRAP. The initial sample of dwellings was the same as that used for the physical inspections. For rental properties both the landlord and one tenant received the client survey. The respondents were asked about the physical characteristics of their dwelling, its rehabilitation history, household composition and income, and attitudes towards rehabilitation. The residents were also asked to rate the condition of a number of structural components and mechanical systems of the units.

Design of the questionnaire used in the survey was done by EKOS Research Associates, who also were involved, with Social Policy Research Associates, in conducting the pretest for the survey. The survey itself was carried out for CMHC by Thompson/Lightstone Ltd.

Completed questionnaires were returned for 2 123 units for a total response rate of 53 per cent. Response rates varied considerably by tenure as follows:

- homeowners - 58 per cent;
- landlords - 55 per cent;
- tenants - 29 per cent.

Non-response can be attributed generally to the nature of the questionnaire (mail survey) and specifically to errors in the sample including incorrect names and addresses, improper language designation and for tenants, occupant turnover.

The response from homeowners and landlords was sufficient to permit analysis to be carried out. However, for tenants, a second survey was carried out which incorporated the selection of a new sample, additional sample verification procedures, survey and follow up measures to ensure an adequate response for statistical analysis purposes. The follow up tenant survey was conducted by the Institute of Social Research (ISR) in October and November of 1984. Out of the sample of 1 663 tenants, responses were received from 1 085 for a response rate of 65 per cent.

Details on the design and implementation of the client surveys are available in the final reports provided to the Corporation by the respective consultants.

c) Administrative Data

Computerized administrative records were obtained for all RRAP activity. These records provide data on owner economic and demographic characteristics and details of the RRAP loan and forgiveness. The file contains 210 300 records covering RRAP activity up to June 1984.

d) Role of Government

A literature review and four papers were commissioned on the theoretical role of government in the rehabilitation of existing housing. A range of approaches, economic, administrative and social, were explored. These provided useful input to the examination of roles for government in rehabilitation and to the evaluation of RRAP within the overall context of government activities. The literature review was prepared by Kathleen Mancer and the papers by Michael A. Goldberg, Pierre A. Letartre, Stuart Smith and Allan M. Maslove.

e) Rehabilitation Industry

Two studies were undertaken to investigate the relationship between RRAP and the rehabilitation industry. One study, conducted by André Leroux Associates, investigated the labour and materials requirements for rehabilitation activities. Using RRAP work orders, coefficients were developed for a range of rehabilitation activities, building forms and regions of Canada. The coefficients assist in measuring the impact of rehabilitation activity on labour markets, related industries and on the economy in general.

The second study involved a survey of renovation contractors in the Metropolitan Toronto area. The survey conducted by Donald M. Caskie, gathered information on the history and organization of the firms' involvement in renovation activity, the activity levels of the firms, the number of employees and the financial profile of the firms. This Toronto case study did not provide a great deal of information relative to RRAP as the small sample of firms surveyed was composed of large firms which had very little experience with RRAP. Other research indicates that the majority of firms which do work under RRAP are much smaller. Nevertheless, it has provided some insight into the nature of the renovation industry more generally.

f) Maintenance and Occupancy By-Laws

A survey was undertaken to determine municipal procedures and activity levels for enforcement of maintenance and occupancy by-laws. Twenty-one municipalities were selected of which 19 responded. Questions investigated included type of legislation, changes in codes or procedures due to RRAP, enforcement procedures, compliance techniques, level of activity and costs. Specific emphasis was placed upon obtaining information about practices in RRAP-designated and non-RRAP areas within each municipality.

g) Inventory of Other Renovation Programs

An inventory of other government renovation programs was compiled. This included federal, provincial and municipal programs which assist homeowners, landlords or tenants. Activities include the full range of renovation work such as repair of substandard items, improvements to energy systems and insulation, modifications to increase access for disabled occupants, renovations to improve or enlarge the dwelling and

conversion to create additional units. Types of assistance provided range from information and advice to loans and/or grants. The complete inventory has been assembled in a separate report.

h) RRAP Delivery

A study was undertaken by Peat Marwick Associates to investigate the activities carried out and costs incurred by delivery agents in delivering RRAP loans. Office profiles were prepared for 11 delivery agents across Canada for which case studies were undertaken in five offices. This sample included municipal, private non-profit and CMHC delivery agents. The results of the study are useful in identifying the types of staff, activities and costs involved in delivering RRAP. However, due to differences between the individual offices, such as rural/urban location and number of applications approved, the data do not provide general information applicable to all delivery agents, and must be considered as a preliminary source of evidence only.

i) RRAP Administrators Survey

Views on the program were solicited from RRAP delivery agents (both private and municipal), provincial officials, RRAP administrators at CMHC branch offices and other organizations involved in the delivery of RRAP. An open-ended questionnaire format was used to permit the respondents to comment on general issues as well as specific points. Over 50 individuals returned responses with up to 20 pages of comments.

j) Occupant Dislocation

A study was undertaken to investigate the relationship between RRAP and occupant dislocation. The basic research question was whether occupants, primarily tenants, were being forced to vacate as a result of the disruption caused by rehabilitation work or the passing through of repair costs after completion of the work. Mobility rates were used as a proxy for dislocation. These were compared for RRAP and non-RRAP areas in municipalities across the country using Census data. While this did not provide details on individual moves, the analysis identified areas where differences in mobility rates may be related to the presence or absence of RRAP. The study supplements information obtained through the client surveys on the number of occupants who have remained in the units since they were RRAPed.

k) RRAP Standards

Four critiques of the Standards for the Rehabilitation of Residential Buildings (NHA 5132) were commissioned from 2 teams of delivery agents and 2 renovation architects. The reviewers examined the role of the standards in qualifying dwellings for inclusion in RRAP and in identifying work items eligible for funding under the program. The four reviews were prepared by Elizabeth Gillis and Rita Fraser, Allan Collins, Jack Milne and David Rose, Robert McLaren and Nils Larsson.

C. Management

The RRAP evaluation was conducted and managed internally by the Program Evaluation Division. External consultants were utilized for the major data collection and survey activities. Three committees were formed to provide guidance and input for the conduct of the evaluation.

a) CMHC Steering Committee

A Steering Committee, consisting of CMHC divisional directors, was established to oversee the evaluation. The Committee met periodically to monitor the progress of the evaluation and to review analyses and findings.

b) Advisory Committee

An Advisory Committee was established to provide advice and guidance to the evaluation team from agencies involved in the delivery of RRAP. Representation included the Canadian Association of Housing and Renewal Officials (CAHRO), the Canadian Home Builders Association (CHBA, formerly HUDAC), Heritage Canada, Energy Mines and Resources, the Office of the Comptroller General and CMHC program divisions involved in the delivery of RRAP.

c) CMHC Working Committee

A Working Committee was established, with representation from all CMHC divisions with an interest in RRAP, to provide input and support to the evaluation team on specific evaluation, methodological and analytical issues. Additionally the Committee provided comments on the evaluation plan, preliminary results and reviewed the drafts of the evaluation report.

d) Regional Contacts

Contacts were appointed in each CMHC regional office to provide liaison with provincial and local officials. They also facilitated certain data collection activities and reviewed and commented on drafts of the evaluation report.

II. PROGRAM DESCRIPTION

A. Background

Federal involvement in residential rehabilitation and renovation dates back to the 1950's. At that time, the Home Improvement Loans Program was introduced to provide loan guarantees for loans taken by homeowners, from private lenders, for home improvements. The program made no distinction between work to repair the dwelling and improvements to the dwelling, and assistance was not based on income.

Through the 1960's, the federal approach to existing housing turned to urban renewal. Deteriorated housing in urban areas was demolished to provide land for new construction. However, by the end of the decade, it had become apparent that urban renewal was not the answer to the problems of urban housing. Displacement of residents, community disruption and opposition and the accelerating costs of new construction forced the government to seek an alternative solution.

The federal government authorized CMHC to undertake several residential rehabilitation projects in 1970, including a \$200 million Innovation program. These programs were aimed at repairing and improving the existing housing stock. As well, several other federal initiatives supported home improvements as a means of employment generation, such as winter works projects. Work which took place under these programs was not a result of a concerted effort to maintain or extend the life of the existing housing stock, but rather, was a by-product of other objectives.

In 1973, the Neighbourhood Improvement Program (NIP) and the Residential Rehabilitation Assistance Program (RRAP) were introduced as the intended replacement for urban renewal. NIP was created to provide funding for improvements to the public infrastructure in selected low-income residential areas and RRAP was introduced to subsidize the rehabilitation of the private housing stock in these areas.

The intent was to improve overall neighbourhood conditions and encourage the improvement of housing to reasonable quality standards without the major problems experienced with urban renewal. The apparent success of similar provincial programs in Quebec, Prince Edward Island and Manitoba, municipal programs in Toronto and Montreal, and preliminary federal initiatives supported this policy direction. Although NIP was discontinued in 1978, RRAP continued to be delivered in designated areas of urban centres.

Initially RRAP involved two forms of subsidy. The first was designed to reduce interest rates on RRAP loans to 8 per cent. This feature was removed in 1978. The second was the forgivable portion of the loans, which has remained in place. The maximum level of loan forgiveness was increased in 1976, in 1982 and for rural homeowners in 1984. Income limits for forgivable loans to homeowners were increased in 1980 and 1982.

Prior to 1979, direct loans from CMHC were available for both rental and homeowner RRAP. In that year, major changes were introduced to a number of CMHC programs to limit demands on the capital budget. A requirement for private repayable loans for rental RRAP was adopted at that time, although direct lending has been maintained for some cases. Homeowner RRAP loans are still provided directly by the Corporation.

In 1980 changes were implemented to the Urban RRAP budget allocation procedures to ensure that funding for Urban RRAP is directed to municipalities in most need of rehabilitation assistance and that the capital budget is fully committed each year. The Capital Budget Control Plan has two major components: the urban Priority List (UPL) and the Rehabilitation Delivery Schedule (RDS). The UPL is an advisory list which identifies and ranks municipalities according to rehabilitation need. The RDS is prepared by the municipality for each rehabilitation area (existing NIP or RRAP area or proposed new RRAP area) and describes the housing conditions of the area, the projected RRAP takeup and the RRAP delivery strategy.

In 1974 RRAP was extended to rural areas as a component of the Rural and Native Housing Program. It was also subsequently made available to Indian reserves, in cooperation with the Department of Indian and Northern Affairs. The Rural RRAP program was essentially unchanged since its introduction in 1974, except for adjustments to income and forgiveness levels. In 1984, major modifications were approved which reflected the generally high costs and lower income of recipients in rural areas.

Three geographical zones were established for determination of maximum homeowner forgiveness. In Zone 1, generally the Atlantic Provinces and southern half of the other six provinces, maximum forgiveness remains at \$5 000. Zone 2 includes the northern half of the provinces where additional forgiveness is available to \$6 250. In the two northern territories, northern Quebec and Labrador (Zone 3) forgiveness of \$8 250 is available. In all zones, the

maximum loan available under RRAP was increased to \$25 000. The additional assistance for accessibility work is also available. Rural Rental RRAP remains unchanged, with the same limits as Urban Rental RRAP.

A chronology of major design and delivery changes for RRAP is shown in Figure 2.1.

B. Program Profile

1. Legislative Basis

The legislative basis for RRAP is contained in Section 34.1 of the National Housing Act. This Section authorizes the Corporation to make loans to assist in the rehabilitation, repair and improvement of housing units; to forgive repayment of a portion of the loan as prescribed by regulation; and to recover from the Consolidated Revenue Fund amounts required for these loans and their forgivable portion.

RRAP has a number of sub-components:

- . Urban Homeowner RRAP
- . Rental RRAP - Direct
- . Rental RRAP - Private
- . Rural RRAP
- . On-Reserve RRAP
- . Non-Profit RRAP

This evaluation includes the first four of these components. On-Reserve RRAP is included in a joint evaluation with DIAND of On-Reserve Housing. Non-Profit RRAP was considered in the evaluation of the Non-Profit and Cooperative Housing Programs.

2. Objectives

The National Housing Act permits the Corporation to make loans to property owners for the purpose of "assisting in the repair, rehabilitation and improvement"¹ of the unit. The Urban RRAP Delivery Handbook interprets this mandate as being "to assist in the repair and improvement of existing substandard housing and to promote its subsequent maintenance."²

¹ NHA Part IV Section 34.1 (1).

² urban RRAP Delivery handbook, 30 October 1981, p. B-2.

FIGURE 2.1

RRAP SELECTED PROGRAM CHANGES

- August 1973 . RRAP and NIP approved
 . Income Limits - \$6 000 for full forgiveness
 . Maximum Forgiveness - \$2 500 per unit
 . Maximum Loan - \$5 000 per unit
- _____ 1974 . Rural RRAP introduced
- May 1976 . Maximum Loan increased to \$10 000 per unit
 . Income Limits - \$6 000 for full forgiveness
 \$11 000 for Interest
 Reduction Grant
 . Maximum Forgiveness increased to \$3 750
- June 1976 . RRAP Standards introduced
- January 1978 . RRAP Standards revised
- May 1978 . NIP terminated
 . Designated Rehabilitation Areas introduced
 . Interest Reduction Grants eliminated
 . Rental RRAP Forgiveness 50 per cent to
 maximum \$2 500
- April 1979 . RRAP(P) introduced
 . RRAP(P) for Rooming Houses
 - Forgiveness 50 per cent to
 maximum
 - \$3 750 for 1st three beds
 - \$2 000 for each additional bed
- June 1980 . Income Limits raised to \$9 000 - \$16 500
- September 1980 . Tenant Displacement Allowance introduced
 \$20/day first 2 persons
 \$10/day each additional person
- October 1980 . Urban RRAP Capital Budget Control Plan
 . Urban Priority List (UPL)
 . Rehabilitation Delivery Schedules (RDS)
- April 1981 . Non-Profit RRAP introduced using RRAP(P)
- June 1981 . RRAP eligible items extended to include work
 to increase accessibility
- July 1982 . RRAP Standards revised
- November 1982 . Income Limits raised to \$13 000 - \$23 000
 . Maximum Homeowner Forgiveness raised to
 \$5 000
 . Maximum Landlord Forgiveness raised to \$3 500
 per unit
 . Maximum Hostel forgiveness raised to \$2 500
 per bed
 . Additional \$3 000 loan, \$1 500 forgiveness
 for work to increase access for a disabled
 occupant
- February 1984 . Rural RRAP revisions
 Maximum Homeowner Loan - \$25 000
 Maximum Homeowner Forgiveness
 - Zone 1 - \$5 000
 - Zone 2 - \$6 250
 - Zone 3 - \$8 250
- Additional \$3 000 loan, \$1 500 forgiveness
for work to increase access for disabled
occupant

Within this mandate, the RRAP delivery handbooks identify four objectives for the Residential Rehabilitation Assistance Program.¹

Assistance to Residents - to provide assistance to residents living in substandard housing on the basis of need.

Health and Safety - to improve substandard housing to an agreed level of health and safety.

Quality and Useful Life - to ensure that the quality of repair and improvement substantially extends the useful life of the dwelling.

Maintenance - to promote an acceptable level of maintenance of the existing housing stock.

These objectives are shared by both Urban and Rural RRAP with one exception. For Rural RRAP, the objective of providing Assistance to Residents is based on assisting the lowest income, largest families and worst housed first².

3. Description³

RRAP offers loans to homeowners and landlords of substandard dwelling units to undertake necessary repairs to their properties. A portion of the loan is forgivable and does not have to be repaid. The forgiveness is 'earned' over a period of five years by continuing to own and occupy or rent the unit. Loan and forgiveness maxima are detailed in Table 2.1. Generally, loans are available up to a maximum of \$10 000 per unit for urban homeowners and landlords and \$25 000 per unit for rural homeowners. An additional \$3 000 is available for work to increase accessibility for a disabled occupant.

¹ These objectives are stated in the Guidelines and procedures Manuals prepared by CMHC to govern program delivery.

² Rural RRAP Delivery Handbook, p. I-1.

³ Income limits and maximum forgiveness levels cited are those currently in effect. At the time of data capture for the study the income limits for homeowners were \$9 000 and \$16 500 and maximum homeowner forgiveness was \$3 750. Maximum forgiveness for rental RRAP was \$2 500 per unit. Details of program changes can be found in Figure 2.1.

Maximum forgiveness is available to homeowners with adjusted family income of \$13 000 or less, and decreases to zero at an income of \$23 000. For urban homeowners, up to \$5 000 of forgiveness is available. Under Rural RRAP, maximum forgiveness is determined by location and ranges from \$5 000 in Zone 1, (generally southern areas close to major population centres) to \$8 250 in Zone 3 (northern remote areas). Where accessibility work is undertaken for the disabled, an additional \$1 500 of forgiveness is available to all homeowners.

For landlords, under RRAP (P), loans are obtained from private lenders with CMHC providing forgivable loans covering 50 per cent of the cost of the work. The maximum forgiveness is \$3 500 per unit in both urban and rural areas. CMHC continues to provide direct loans under RRAP (D) to landlords of two unit buildings who occupy one unit and rent the other. The loan maximum of \$10 000 per self-contained unit and the supplement for accessibility work also apply to rental units.

Since RRAP is a rehabilitation, rather than a modernization or up-grading program, only dwellings which are substandard in at least one of the following six basic items qualify for assistance:

- (a) Structural Soundness
- (b) Fire Safety
- (c) Electrical Services
- (d) Plumbing
- (e) Heating Systems
- (f) Accessibility for a Disabled Occupant

Replacements are not permitted where repairs can be done at less cost and still produce acceptable quality. In cases where individual components of a larger system are substandard or non-functional, such as in plumbing or heating systems, replacement of these components is permitted. Eligible work which may be funded under RRAP is identified in NHA 5132 Standards for the Rehabilitation of Residential Buildings. Work beyond these standards is permissible but is not eligible for RRAP assistance.

RRAP is available to owners of properties located in designated RRAP areas in urban municipalities and in rural municipalities or communities with population less than 2 500. RRAP is available universally across Canada for work to increase accessibility for disabled occupants.

TABLE 2.1

RRAP LOAN AND FORGIVENESS MAXIMA (1984)
(\$ per unit)

	Maximum Loan		Maximum Forgiveness ²		Forgiveness Earned Per Year	
	Rehab Work	Rehab and Disabled Work	Rehab Work	Rehab and Disabled Work	Rehab Work	Rehab and Disabled Work
URBAN						
Homeowner	10 000	13 000	5 000	6 500	1 000	1 300
Rental Self-Contained Hostel Beds	10 000 ¹	13 000 ¹	3 500	5 000	700	1 000
			2 500		500	
RURAL						
Homeowner Zone 1	25 000	28 000	5 000	6 500	1 000	1 300
Zone 2	25 000	28 000	6 250	7 750	1 250	1 550
Zone 3	25 000	28 000	8 250	9 750	1 650	1 950
Rental Self-Contained Hostel Beds	10 000	13 000	3 500	5 000	700	1 000
	4 000		1 750 1st 3		350 1st 3	
			2 500 additional		500 additional	

Notes:

1. Repayable loans are available only under RRAP (D). Where private lenders are used for RRAP (P) only the forgivable loan is available from CMHC.

2. Maximum forgiveness is available to homeowners where adjusted family income is \$13 000 or less. Forgiveness decreases to zero at income of \$23 000.

A prerequisite to the operation of the program is that the municipality or the province must have adopted a Maintenance and Occupancy Standard acceptable to CMHC. In some cases a resolution by council or agreement to use the RRAP standards is sufficient.

4. Program Logic

The logic chart shown in Figure 2.2, links program activities to outputs and also identifies direct and indirect impacts.

Activities describe the actions taken by the Corporation in delivering the program. They are basically of two types: first, the provision of loans and second, the fees and services offered to delivery agents.

Outputs indicate the actual products of the program. They consist of loans for rehabilitation purposes, a portion of which is forgivable for low-income households and for landlords.

Direct Impacts show the effects which the program is intended to have. For units which receive RRAP funding, these include improved housing conditions, an acceptable level of maintenance and extended dwelling life. Because assistance is provided at least in part to low-income households, an increase in adequate housing stock available for these households should result. Direct impacts of providing loans for rehabilitation and fees for delivery agents are the creation of jobs for rehabilitation contractors and delivery agents, and increased expertise in rehabilitation work.

Indirect Impacts are those events which may not be directly attributable to the program, but in some way occur because of the existence of the program. Indirect impacts which have been identified include improved living conditions for occupants and an improved neighbourhood environment in RRAP areas. This in turn may lead to higher property values and an improved investment climate but could also result in occupant displacement.

Secondly, because of the "contagion" effect, RRAP funding may result in more private rehabilitation in adjacent dwellings. In addition, municipal and provincial programs have been developed in response to rehabilitation needs to complement or supplement RRAP.

Thirdly, RRAP may decrease requirements for new construction and infrastructure through more effective use of the existing stock. It may be that rehabilitation also responds to declines in new construction rather than generates them.

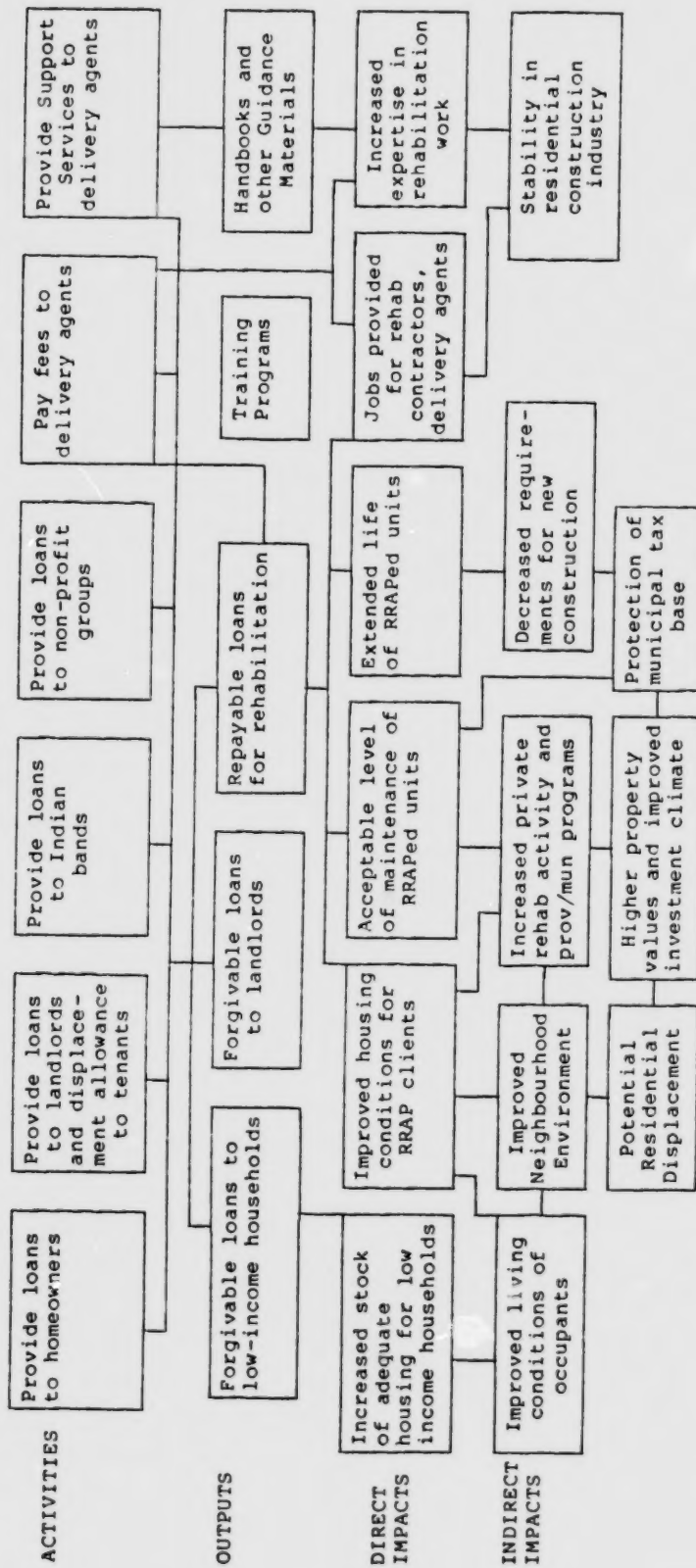
Fourth, achieving an acceptable level of maintenance of RRAPed units and higher property values offers some protection to the municipal tax base.

Finally, the provision of jobs to those involved in the rehabilitation process may result in greater stability in the housing industry.

These activities, outputs and impacts of the program form the basis for the issues addressed in this evaluation.

FIGURE 2.2

PROGRAM LOGIC



C. Delivery¹

RRAP is delivered by agents on behalf of CMHC. In urban areas, delivery agents are usually municipal governments who deliver RRAP, in addition to other programs, within their area of jurisdiction. In rural areas, a number of different types of agents deliver the program. These include local and regional governments, provincial agencies, non-profit and native organizations, private firms and CMHC local offices. CMHC directly delivers all non-profit and disabled RRAP loans.

1. Delivery Process

Regardless of the type of delivery agent, the delivery process remains the same and includes the following steps:

- i) preliminary application;
- ii) initial inspection;
- iii) description of work and cost estimates;
- iv) final application; and
- v) progress and final inspections.

i) Preliminary Application

The agent meets with the applicant to discuss the assistance available from the program and the needs of the applicant. The agent ensures that the applicant is aware of the intent of the program, the location and ownership criteria of the program and the forgivable/repayable form of the assistance. When the applicant is fully aware of the requirements of the program the agent assists in the preparation of a preliminary application form.

The preliminary application includes details on the characteristics of the dwelling and applicant. The agent reminds the applicant that the terms and conditions of loan approval will require that the repairs satisfy the requirements of the RRAP Standards and ensure a continued useful life of 15 years, that an inspection of the property and periodic inspections of the work in progress be permitted, that a rental agreement be

¹ This section is based on the program delivery procedures in the Urban and Rural RRAP Delivery Handbooks.

entered into for rental loans and that the amount of forgiveness for homeowner loans will be determined by the applicant's adjusted family income.

ii) Initial Inspection

The initial inspection is intended to perform two functions. First, it should verify that the dwelling meets the RRAP eligibility requirements by being substandard in one of the six basic areas and that the repairs will likely ensure a continued useful life of at least 15 years. Second, it should identify the work required to bring the property up to the level of health and safety identified in the RRAP Standards. As well, additional work which is eligible for RRAP funding would be identified at this time.

The object of the inspection is to help the applicant rehabilitate the property and to derive the maximum benefit from RRAP. The applicant should be notified of the date and time of the inspection in order to be there to participate. The owner's knowledge of the property can be very useful and may help to ensure that no work requirements are missed.

iii) Description of Work and Cost Estimates

If the inspector has decided that the dwelling is eligible for RRAP then a specification report is completed for the property. The report gives a detailed description, in non-technical terms, of all of the work which is to be done. Work items are organized according to a standard division of activities. The inspector is required to do a cost estimate of the work involved, to be used as a guide in determining what a reasonable bid should be and whether it is within the financial resources of the applicant.

The completed specification report, without the cost estimates, is given to the applicant to be used to solicit bids on the work from at least two contractors. When the applicant has received the bids, these costs are compared with the inspector's estimate. The applicant, with the help of the inspector, then selects one of the contractors to undertake the work. A bid should not be considered acceptable if it differs from the inspector's estimate by more than 10 per cent.

Applicants may undertake some or all of the work themselves, but must have plumbing and electrical work carried out by qualified contractors. The applicant may charge for his labour at a rate acceptable to the inspector. Any local or provincial requirements for the use of licensed trades must be observed.

iv) Final Application

The agent assists the applicant to complete the final application for the RRAP loan. More detailed financial information for homeowner applicants and statements of revenues and expenses for rental applicants are required. The final application includes the calculation of the forgivable and repayable portions of the RRAP loan.

For homeowner applicants the adjusted family income and total debt service must be calculated to determine the amount of available forgiveness and the ability of the household to assume the repayable portion of the RRAP loan if required. For landlords, the forgiveness is based on the cost of the repairs.

The adjusted family income is the aggregate gross income, in whatever form received, of the principal wage earner and the spouse. Certain deductions are made from this gross income figure as follows:

- living out or travelling allowance of family head;
- capital gains such as insurance settlements, inheritances, sale of effects;
- family allowances;
- earnings of a working spouse up to \$1 000;
- the first \$1 000 of income, over and above social assistance payments, received by a one parent family; and
- \$300 for each dependant child.

For ease in calculating the amount of forgiveness, the adjusted family income is rounded down to the nearest \$50.

The amount of RRAP forgiveness available is calculated as the maximum amount (\$5 000) less \$1 for each \$2 of income over \$13 000. The delivery

agents have tables showing the forgiveness available for all adjusted family incomes. Where alterations to improve the accessibility of a unit for a disabled person are carried out, an additional \$1 500 of forgiveness is available.

The total debt service ratio is a guide to determining the applicant's ability to pay back any repayable loan portion involved in his or her financing. The ratio is calculated as the total of all annual payments pertaining to the property and those which represent fixed payments over time divided by the gross annual income. These payments include:

- mortgage principal and interest;
- property taxes;
- principal and interest for the repayable portion of the RRAP loan;
- principal and interest for other loans for the purchase, repair or improvement of the property;
- other shelter costs (utilities, insurance, etc.); and
- payments for car loans, personal loans, and installment purchases.

A guideline total debt service ratio of 40 per cent has been set to indicate a situation which might present too great a burden on the applicant. The agent must review the TDS ratio and also take into account the household situation to determine if the RRAP loan payments can be met within the household's budget.

In the case of landlords, the available forgiveness is equal to 50 per cent of the cost of the eligible repairs up to a maximum of \$3 500 per unit. An additional \$1 500 per unit is available for accessibility work. The landlord is required to arrange for the RRAP repayable loan with a private, institutional lender. The applicant is required to submit evidence that the additional financing has been secured through an insured loan under Section 6, a conventional or personal loan or owner equity. The landlord must enter into a rental agreement which places a ceiling on the rents for the period of the earning of forgiveness.

The maximum allowable post-RRAP rent increases are calculated based on the landlord's cost of the repayable RRAP loan amortized on a 20 year term. This term is used regardless of the actual repayment period selected by the landlord. Where provincial or other rent control legislation is in effect, the actual rent charged cannot exceed the maximum permitted by the Rent Control Board.

v) Progress and Final Inspections

After the final application has been submitted and the loan approved, the work must commence within 90 days. At any time after the promissory note or mortgage has been executed, advances for work in place may be made at the request of the property owner. The inspector will visit the site to determine the value of the completed work and to ensure that it meets the applicable codes and standards. For rental loans the forgivable portion is only advanced following the advancement of the repayable loan or the input of owner's equity.

The local CMHC office is responsible for the issuing of progress payments upon the recommendation of the agent and inspector. CMHC is notified that the work is complete upon receipt of the final progress inspection report from the agent. At this time, any repayable portion begins to be repaid according to the terms and schedule specified in the promissory note or mortgage.

2. Delivery Fees¹.

Delivery agents are paid a fee by CMHC for delivery, or partial delivery, of a RRAP loan. In urban areas delivery agents are paid \$400 per unit, for homeowner units and the first unit of a rental loan, with an additional \$50² for each unit in excess of one, where a loan covers more than one unit in the same building. This fee is allocated according to the various steps in the delivery process set out in the agency agreement.

¹ In 1985, a proposal was approved to increase the basic delivery fee to \$600 and to pay increased costs for loans involving additional travel.

² For hostels and dormitory beds the basic \$400 fee applies with an additional \$25 for each additional bed.

In rural areas, the standard agency fee is the same as that provided through the urban program. Higher fees are provided where additional costs, primarily travel, are incurred. Provincial maximums vary up to \$650 per unit, with the exception of Labrador where the maximum is \$850.

D. Activity

Table 2.2 presents a summary of activity under the program by year and by province.

TABLE 2.2
RRAP ACTIVITY, 1974 - 1984

Year	Urban				Rural			
	Owner Loans	Rental Loans	Units ¹	Non-Profit Loans	Owner Loans	Rental Loans	Units ¹	Non-Profit Loans
1974	228	11	22	86	159	9	91	0
1975	2 179	592	3 839	34	216	61	154	0
1976	5 644	1 807	4 265	174	2 446	36	73	0
1977	8 265	3 117	8 742	155	4 019	162	538	15
1978	9 136	3 675	9 581	59	10 320	309	732	54
1979	7 686	1 795	4 553	128	15 708	391	745	396
1980	6 985	1 889	7 137	148	15 665	703	2 819	761
1981	8 253	2 133	6 916	196	15 060	622	1 483	1 012
1982	8 485	2 323	8 054	300	16 227	951	1 812	1 674
1983	11 723	3 168	11 915	260	18 761	963	2 256	2 223
1984	10 943	3 005	11 890	246	17 276	765	1 559	2 309
By Province								
Nfld	3 553	408	872	41	10 546	46	58	-
PEI	3 059	1 015	2 646	19	6 065	191	246	-
NS	9 881	1 295	3 054	191	12 217	55	66	466
NB	4 054	1 885	5 178	73	14 833	193	694	301
Que	6 350	9 531	32 323	540	47 784	3 813	8 713	1 037
Ont	12 440	5 019	13 651	435	4 090	308	560	1 822
Man	3 950	393	3 343	164	3 520	4	6	1 121
Sask	10 714	1 153	2 129	30	5 351	105	162	877
Alta	8 954	1 101	2 132	36	3 073	80	114	459
BC	16 410	1 934	6 884	147	7 942	167	465	2 194
Yukon	7	5	36	1	77	1	1	141
NWT	-	-	-	-	139	-	-	1
Canada	79 372	23 739	72 248	1 677	115 637	4 963	11 085	8 307
								8 420

Source: RRAP Administrative Data, 1974 - 1984

1 Includes self-contained rental units and hostel bed units

III. PROGRAM RATIONALE

The first set of evaluation issues deals with the rationale for the program. These include:

- an assessment of the need for a public rehabilitation program; and
- an examination of the extent to which the design of RRAP logically corresponds to that need.

A. Need for a Public Rehabilitation Program

The Residential Rehabilitation Assistance Program was introduced in response to two major issues.¹ First, prior programs did not recognize the massive public and private investment associated with the existing housing stock, and second, there was a concentration of low and moderate income households in that portion of the existing stock which was in sub-standard condition. Two directions for the program arose from these issues: the need to preserve the existing housing stock through rehabilitation and the need to assist low and moderate income households unable to maintain their dwellings in good condition.

For the purposes of this evaluation, the assessment of the need for a public rehabilitation program will document the extent to which these conditions, which promoted the introduction of RRAP, continue to exist. The criteria used to determine a need for the program are:

- (a) First, the establishment of a need for rehabilitation, both currently and in the future. This requires a focus on the housing stock, using available indicators to determine its physical condition and consequent requirements for rehabilitation.
- (b) Second, the establishment of a need for rehabilitation assistance. This necessitates focussing not only on housing units but on their occupants as well, to determine that required rehabilitation would not occur without some form of assistance.
- (c) Third, the establishment of a rationale for a public sector role in rehabilitation activity. This would clearly lay responsibility for the provision of rehabilitation assistance with the government.

¹ Urban RRAP Delivery Handbook, CMHC, 1981.

Fulfillment of all of these criteria will be considered as evidence of the continued need for RRAP. Partial fulfillment of the criteria may suggest the need for alternative types of rehabilitation assistance programs.

1. Need for Rehabilitation

a) Current Need

Prior to 1973, when RRAP was introduced, the existing stock was permitted to deteriorate over time and was gradually "filtered down"¹ to lower and lower income households as these dwellings became increasingly affordable. When the stock was believed to be a serious hazard, it was replaced with new dwellings, through the initiatives of both private and public enterprises. Since RRAP was introduced, efforts have been made to rehabilitate substandard dwellings in neighbourhoods which were not seriously blighted; that is, not beyond repair. Since RRAP has been active for the past 10 years, it is important to determine whether there is still a portion of the existing stock which requires rehabilitation.

In spite of public programs, and private initiatives, there is likely to be a continuing need for rehabilitation for various reasons. The stock is continuing to age, with a resulting increase in the number of dwellings likely to require rehabilitation. The portion of the stock which required rehabilitation when RRAP was introduced was massive and widely distributed. Because there have been budget restrictions and area designations, there are limits to the extent to which RRAP could address total rehabilitation need. Finally, even dwellings which receive RRAP assistance are vulnerable to falling once again into a condition of substandardness, since the ongoing deterioration of the dwelling and the inability of residents to afford necessary repairs are not directly addressed by the program in a long-term fashion.

¹ Both Canadian and American literature seem to agree that the filtering process exists in varying degrees; however, there is no consensus on "filtering" as a vehicle for improving the housing conditions of low-income households.

In order to assess the need for rehabilitation, ideally one would measure the number of dwellings in substandard condition. No inspection of the housing stock has been undertaken which can provide a complete measure of the number of substandard dwellings in the country. Both the 1981 Census and the 1982 HIFE surveys obtained occupant ratings of dwelling condition. Both ask the occupant to rate the dwelling as being in need of major repair, minor repair or regular maintenance¹.

This measure of need for repair does not correspond precisely with the definition of a substandard dwelling in use in the program. As a result, it is necessary to select between two alternative criteria: a) the need for major repair; or b) the combined need for major and minor repair. The former likely represents a conservative estimate of the need for rehabilitation, while the latter may over-estimate total need. The nature of repairs identified in the "major repair" category more closely reflects the types of deficiencies eligible under RRAP. For this reason, for the purposes of the evaluation, the need for major repair only is used as the indicator although it should be noted that this may under-represent total rehabilitation need.

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- 1 This measure is obtained from the Household, Income, Facilities and Equipment Survey conducted by Statistics Canada. The question was as follows:

Is this dwelling in need of any repairs? (Do not include desirable remodelling, additions, conversions or energy improvements. Select one category only).

MAJOR REPAIRS include, for example, corroded pipes, damaged electrical wiring, sagging floors, bulging walls, damp walls and ceilings, crumbling foundation, rotting porches and steps.

MINOR REPAIRS include, for example, small cracks in interior walls and ceilings, broken light fixtures and switches, leaking sink, cracked or broken window panes, some missing shingles or siding, some peeling paint.

REGULAR MAINTENANCE includes, for example, painting, leaking faucets, clogged gutters or eavestrough.

The difficulties in assessing physical house condition are further demonstrated in a comparison of the HIFE and Census repair need estimates. The need for major repair in HIFE is 100 per cent greater than the Census estimate. Although there are some differences between the two questions¹, the very large difference in results is difficult to explain. The interpretive nature of the concept being measured and the order of the responses may be more significant than might be expected. Nevertheless, the direction and strength of relationships between need for major repair and characteristics of the household and dwelling are similar for both the HIFE and Census data. For this reason, and because the HIFE data contains additional variables useful for the analysis, the estimates of need for repair from HIFE 1982 are used throughout the evaluation. It should be noted that these will over-estimate the total rehabilitation need when compared to the 1981 Census.

There are other limitations to the use of the major repair estimates from the HIFE survey. As an opinion survey to a limited, although representative, sample of Canadian households, the findings are subject to interpretation. The Ottawa Pilot Study on house condition², which attempted to identify variables critical in assessing house condition, discussed some of the problems of interpretation. For example, owner occupants tended to be quite harsh in their assessment of house condition, as did respondents from households earning more than \$20 000. Renters tended to under-estimate true repair needs, as did lower-income respondents. However, lower-income occupants did a better job of estimating the costs of required repairs than did higher-income occupants.

¹ The 1981 Census question presented the response categories in opposite order (Regular Maintenance, Minor Repair, Major Repair), with different wording and examples of work activities, and used a different sample size and selection method.

² Pilot Study of Physical House Condition and Rehabilitation Need; Major Report, CMHC, Frank Graves and Fred Ermuth, 1981, p.85-95. The pilot used the 1981 Census question and obtained occupant and inspector ratings of the condition of a sample of dwellings in the Ottawa region.

A survey of private rehabilitation (occupants) to be conducted in conjunction with the Rehabilitation and Conservation Overview Evaluation will attempt to reconcile these differences. However, until this work is completed, the best proxy of need for rehabilitation and, consequently, dwelling substandardness is the major repair question in the HIFE Survey.

The need for rehabilitation will first be analyzed in relation to a number of pertinent variables, including region, tenure, dwelling age, settlement size, concentration of need, age of household head and household income. Subsequent analysis will attempt to isolate those variables having the greatest association with the need for repair.

Table 3.1 indicates that 13 per cent of the existing housing stock in Canada requires major repair. This represents over 1 million of the 8.5 million dwelling units in the country. An additional 1.3 million dwellings, or 15 per cent of the total stock require minor repairs, while the remaining 72 per cent or 6 million dwellings require only regular maintenance.

TABLE 3.1

OCCUPANT IDENTIFIED NEED FOR REPAIR

	No. of Households	%
Major Repair	1 087 170	12.9
Minor Repair	1 259 050	14.9
Regular Maintenance	6 083 000	72.2
TOTAL	8 429 220	100.0

Source: HIFE Survey, Statistics Canada, 1982

While there is an identified need for major repair in all regions of the country and in dwellings occupied by households with varying characteristics, there are differences in the incidence of major repair needs. Table 3.2 summarizes the distribution and incidence of the need for major repair for a variety of locational, dwelling and household characteristics.

By region, it is apparent that the incidence of need for major repair decreases as one moves westward, with the highest incidence of need found in Atlantic Canada. Similarly, there is a relationship between the need for major repair and settlement size, with incidence increasing in smaller sized urban centres and rural areas.

The most significant differences in the incidence of need for major repair occur with respect to the age of the dwelling unit. As would be expected, older dwellings have much greater need for repair; dwellings over 42 years of age are five times more likely to be in need of major repair than are those more recently constructed. Owned dwellings are more frequently identified as requiring major repair than are rental units.

With respect to household characteristics, a strong relationship between major repair need and either household income or age of household head did not emerge. However, further exploration of the household income variable, as shown in Table 3.3, reveals that this lack of relationship does not hold true for particular sub-groups. Among homeowners, for example, the need for major repair is clearly related to income. This is also the case in rural areas, in the Atlantic Region and, to a lesser extent, in the Prairies.

Although descriptively, certain relationships between independent variables and need for repair have been presented, it is important that the overall effect of those variables be determined in a model for the repair need of the existing stock. The first step in constructing this model involved a factor analysis of all related explanatory variables to limit the number of variables and to eliminate co-variation between them. In order to accommodate the requirement for dichotomous variables in the model-building technique, some of these variables have been simplified.

TABLE 3.2
DISTRIBUTION AND INCIDENCE OF NEED FOR
MAJOR REPAIR BY VARIOUS CHARACTERISTICS

	<u>In Need of Major Repair</u>		<u>Incidence of Major Repair Need</u>
	<u>Number</u>	<u>%</u>	<u>%</u>
	<u>(\$000)</u>		
<u>Region</u>			
Atlantic	123	11.4	17.9
Quebec	288	26.5	13.0
Ontario	399	36.7	13.2
Prairies	164	15.1	11.1
B.C.	112	10.3	11.0
 <u>Settlement Size</u>			
Urban (100 000)	521	48.0	10.8
Urban (30 000-100 000)	99	9.1	12.4
Urban (2 500-30 000)	194	17.9	14.4
Rural (2 500)	271	25.0	18.6
 <u>Dwelling Age</u>			
Over 42 years	459	42.3	25.5
33-42 years	141	13.0	20.8
23-32 years	178	16.5	14.5
13-22 years	198	18.3	11.0
Under 13 years	108	9.9	5.6
 <u>Tenure</u>			
Owners	752	69.2	14.1
Renters	334	30.8	10.8
 <u>Household Income (\$)</u>			
5 000 or less	52	4.8	14.9
5 001- 9 000	123	11.4	14.7
9 001-13 000	116	10.7	14.6
13 001-16 500	96	8.9	14.7
16 501-23 000	160	14.8	12.6
23 001-30 000	182	16.8	13.7
30 001-40 000	172	15.9	11.4
more than 40 000	183	16.9	11.0
 <u>Age of Household Head</u>			
less than 65	924	85.0	13.0
65 and more	163	15.0	12.5

Source: HIFE Survey, Statistics Canada, 1982.

TABLE 3.3

INCIDENCE OF NEED FOR MAJOR REPAIR BY HOUSEHOLD INCOME

Household Income (\$)	REGION					SETTLEMENT SIZE			
	Atl.	Que.	Ont.	Prai.	B.C.	Over 100 000	30 000 -100 000	2 500 -30 000	Below 2 500
5 000 or less	22.3	15.2	13.3	15.7	11.8	10.3	15.1	18.5	26.8
5 001-9 000	23.3	15.3	12.6	13.2	14.1	10.9	14.4	16.1	24.5
9 001-13 000	20.0	17.0	13.5	12.9	9.5	11.2	13.0	15.3	21.6
13 001-16 500	21.9	15.7	14.3	13.0	10.4	11.7	14.7	16.7	20.7
16 501-23 000	18.7	11.8	13.0	11.4	9.6	10.0	12.4	14.8	17.8
23 001-30 000	16.0	13.3	15.3	10.9	11.8	11.7	13.6	15.0	18.7
30 001-40 000	14.4	10.0	12.4	10.1	11.4	10.2	11.1	13.0	14.7
more than 40 000	11.3	11.0	12.4	8.6	10.4	11.0	9.1	10.2	13.1

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Household Income (\$)	AGE OF DWELLING				TENURE		AGE OF HOUSEHOLD HEAD	
	Over 40	30-40	20-30	10-20	Below 10	Owner Occupied	Rented	Below 65 Over 65
5 000 or less	24.1	23.5	12.5	10.6	4.8	21.5	11.4	14.7 15.8
5 001-9 000	25.0	24.2	13.2	11.8	6.6	20.3	10.7	15.4 13.9
9 001-13 000	26.3	17.8	14.6	9.9	7.5	17.8	11.1	16.2 12.0
13 001-16 500	28.4	17.6	12.8	12.0	6.0	17.8	11.4	15.1 13.6
16 501-23 000	24.0	21.4	13.2	10.7	4.3	14.5	10.2	13.0 9.2
23 001-30 000	27.4	25.4	17.7	11.6	5.9	14.7	11.8	13.9 11.2
30 001-40 000	26.6	17.4	13.3	10.9	5.3	11.7	10.4	11.4 10.6
more than 40 000	22.3	18.6	16.0	10.7	5.7	11.3	9.5	11.0 12.1

Source: HIFE Survey, Statistics Canada, 1982

A logistic regression analysis using these key variables revealed that 45 per cent of the variation in need for repair was explained by five of the variables: old dwelling age, rural location; rental tenure, Atlantic Region, and Prairie Region. Of these, the old dwelling age variable is by far the most substantively significant. It explains almost three times the variation explained by the second strongest independent variable (rural location) and more than five times that explained by the three other significant variables (rental tenure, Atlantic Region, Prairie Region).

The need for major repair is positively related to the age of the dwelling; the incidence of need is consistently higher for older dwelling age intervals. Table 3.4 shows the distribution, by dwelling age interval, of all dwellings and dwellings in need of major repair. While over half of the dwellings are under 22 years of age, over half of all dwellings in need of major repair are over 33 years of age. These older dwellings are 3 to 5 times more likely to need major repairs than the newer dwellings.

TABLE 3.4

DISTRIBUTION AND INCIDENCE OF NEED FOR
MAJOR REPAIR BY DWELLING AGE - CANADA 1982

Dwelling Age (Years)	All Dwellings #(000)	%	Dwellings in Need of Major Repair #(000)	%	Incidence of Major Repair Need %
Over 42	1 804	21.4	460	42.3	25.5
33-42	683	8.1	142	13.0	20.8
23-32	1 231	14.6	179	16.5	14.5
13-22	1 812	21.5	199	18.3	11.0
Below 13	2 900	34.4	108	9.9	5.6
TOTAL	8 429	100.0	1 088	100.0	12.9

Source: HIFE 1982.

The incidence of need for major repair is consistently greater in rural areas than in urban areas, 18.6 per cent versus 11.9 per cent. Proportionally, however, almost half of all dwellings in need of major repair are found in urban areas.

One possible explanation relates to the age of the stock. The rural stock, however, has higher incidences of major repair need for all stock age intervals. Even for the oldest age group, over forty years, one in three rural dwellings is in need of major repair compared to one in five urban dwellings.

b) Future Need

As was shown in the previous section, about one million dwellings are estimated to be in need of major repair. Only about one half of these are occupied by households who would qualify for assistance, based on their incomes, under the current design of RRAP. At the current annual rate of 40 000 units rehabilitated through RRAP, this outstanding need represents over 12 years of RRAP activity.

Unfortunately, dwelling condition is not static; that is, dwellings continually age and deteriorate over time. In 1982, 1.8 million dwelling units were estimated to be over 40 years old. Dwellings of this vintage are significantly more likely to be in need of major repair than newer dwellings. Between now and the end of the century, the number of dwellings falling into this age category will double to 3.6 million units. In relative terms, the proportion of Canada's stock that is over 40 years old will increase from 21 per cent in 1982 to 32 per cent in 2001. If the current relationship between dwelling age and need for major repair holds in the future, there will be a growing need for the repair and rehabilitation of the existing housing stock.

A simple model of the future need for major repair, taking the aging of the existing stock into account, can be developed¹. This model calculates the number of dwellings in need of major repair

1 The model assumes that the incidence of repair need determined by dwelling age will remain constant, that is, dwellings constructed today will have the same incidence of repair needs in 25 or 40 years as do dwellings which today are 15 to 40 years old. Changing construction technology and building materials may result in improvements to dwelling life.

using the incidence measured for each dwelling age interval. As shown in Table 3.5, the absolute number and proportion of dwellings in need of major repair will increase each decade to over 1.5 million (17.6 per cent) at the turn of the century. This reflects the aging of the major portion of today's stock which is relatively new and in good condition.

TABLE 3.5
FORECAST OF NEED FOR MAJOR REPAIR (1982-2002)
(000's of dwellings)

DWELLING AGE GROUP (Years)	INC. OF MAJOR REPAIR NEED	1982		1992		2002	
		STOCK	MAJOR REPAIR	STOCK	MAJOR REPAIR	STOCK	MAJOR REPAIR
Over 40 yrs.	25.5	1 802	459	2 240	571	3 026	771
31-40 yrs.	20.8	681	141	1 233	256	1 807	375
21-30 yrs.	14.5	1 233	178	1 807	262	1 931	279
11-20 yrs.	11.0	1 807	198	1 931	212	1 500	165
Below 11 yrs.	5.6	1 931	108	1 500	84	1 050	58
TOTAL		7 456	1 087	8 711	1 385	9 314	1 648
INCIDENCE OF NEED %			14.6		15.8		17.6

Assumptions:

1. 150,000 starts per year (1982-1992), 105,000 per year (1992-2002).
2. Demolitions of 1% of over 40 stock per year.
3. Major repair at 1982 incidences.

Source: Incidence of need for repair and dwelling age count from HIFE, 1982.

The model indicates that there will remain a substantial number of dwellings in need of major repair through the end of the century. The predicted decline in new construction and the aging of today's relatively new stock will result in an increased incidence of major repair need in the future.

2. Need for Public Rehabilitation Assistance

The previous section has identified over one million dwellings in the country that require major repairs. Furthermore, it was shown that due to characteristics of the housing stock, requirements for rehabilitation are likely to increase through to the end of the century.

The issue to be addressed in this section of the evaluation is whether the identified need for major repair translates into a need for rehabilitation assistance. The need for assistance can be said to occur if households are incapable of undertaking the necessary repairs without incurring problems of affordability.

Traditional measures of housing affordability suggest that housing costs should not consume more than 25 or 30 per cent of income. Ideally, to determine the need for rehabilitation assistance, the gross debt service (GDS) of households with an identified need for repair would be added to the additional debt service necessary to make the repairs and examined to assess resulting problems of affordability. In the case of renter households, the rent increase required to recover the landlord's repair costs should be added to the present rent.

The need for assistance can be identified only in a general way by examining the relationships between GDS ratios and income and GDS ratios and need for repair. Furthermore, evidence is available on the actual expenditures incurred by households for housing repairs.

Table 3.6 identifies the relationship between gross debt service ratios and income. Generally, as income decreases the proportion of household income spent for housing increases. It is also clear that, in all regions, the average gross debt service ratios for homeowner households with incomes below \$16 500 is above the 30 per cent threshold where affordability becomes a problem. For tenant households, the average GDS ratios are somewhat lower.

TABLE 3.6

AVERAGE GROSS DEBT SERVICE RATIO¹ - 1981
BY REGION, HOMEOWNERS AND TENANTS

HOUSEHOLD INCOME ²						
	Less Than \$9 000	\$9 000 -\$16 499	\$16 500 -\$24 999	\$25 000 -\$39 999	\$40 000 Plus ³	n
HOMEOWNERS						
Atlantic	32.2	24.8	19.8	16.0	11.6	1 395
Quebec	53.4	49.3	35.1	24.7	15.7	1 069
Ontario	61.5	55.2	36.8	25.5	16.7	1 592
Prairies	53.9	47.4	32.4	23.0	14.9	1 608
BC	41.3	50.8	35.5	24.7	16.3	817
TENANTS						
Atlantic	33.7	18.8	13.8	9.7	7.5	603
Quebec	35.4	18.2	12.3	9.3	6.5	965
Ontario	37.8	24.4	16.8	12.6	9.2	829
Prairies	41.0	26.3	18.3	13.8	9.5	920
BC	42.3	28.0	18.0	14.0	10.0	432

Source: CENSUS, Micro-data, Statistics Canada, 1981

- 1 Shelter costs include:
Homeowners - Principal + Interest + Taxes
Tenants - Rent
- 2 Income is household income before taxes in 1981.
- 3 Maximum shelter cost recorded is \$900 per month, therefore GDS calculation at higher income levels are likely to be underestimated.

It has been shown that there is no significant relationship between household income and a dwelling's need for major repairs. Table 3.7 shows that there is a significant relationship between the household's gross debt service ratio and the dwelling's need for major repair. For homeowners, households in dwellings in need of major repair have GDS ratios, on average, 3.0 percentage points above those of households in dwellings which are not in need of major repair. This relationship holds for all dwelling age categories (the only variable found to be related to the dwelling's need for repair). There is no significant difference in GDS ratios for tenant households.

TABLE 3.7
AVERAGE GROSS DEBT SERVICE RATIO - 1981
BY NEED FOR MAJOR REPAIR AND DWELLING AGE
HOMEOWNERS AND TENANTS

	Major Repair GDS %	n	Not Major Repair GDS %	n	Diff ¹ %	Signif
HOMEOWNERS						
ALL	20.0	3 540	17.0	63 411	3.0	***
Dwelling Age						
40 yrs plus	20.0	1 738	16.5	13 476	3.5	***
25 - 39 yrs	19.2	1 010	15.0	15 883	4.2	***
15 - 24 yrs	18.5	409	15.4	12 639	3.1	***
Less than 15 yrs	22.9	383	19.8	21 413	3.1	***
TENANTS						
ALL	21.9	2 810	22.9	38 377	-1.0	n.s.
Dwelling Age						
40 yrs plus	21.0	1 238	21.0	7 369	0.0	n.s.
25 - 39 yrs	21.4	694	22.0	7 187	-0.6	n.s.
15 - 24 yrs	23.9	559	23.3	10 398	0.6	n.s.
Less than 15 yrs	23.1	319	24.1	13 423	-1.0	n.s.

Source: Census Micro-data, Statistics Canada, 1981

*** Difference significant at the 0.001 level.

1 Positive difference indicates higher GDS ratio for households in dwellings in need of major repair.

Examination of reported expenditures on housing repairs shows consistent findings. There is a clear relationship with income for both the propensity to undertake repairs and the amount of repair expenditures incurred. As shown in Table 3.8, three-quarters of all households reported some expenditures on maintenance and minor repairs. For urban households, as income decreased the incidence of households with expenditures decreased, while for rural households the incidence remained constant. In both cases, the average amount spent increased as income increased.

TABLE 3.8
EXPENDITURES ON REGULAR MAINTENANCE AND MINOR REPAIRS -
BY HOUSEHOLD INCOME GROUP

Income Class	<u>All Households</u>		<u>Urban Only</u>		<u>Rural Only</u>	
	<u>Hshlds.</u>	<u>Average</u>	<u>Hshlds.</u>	<u>Average</u>	<u>Hshlds.</u>	<u>Average</u>
	<u>With</u>	<u>Expendi-</u>	<u>With</u>	<u>Expendi-</u>	<u>With</u>	<u>Expendi-</u>
	<u>Expendi-</u>	<u>tures</u>	<u>Expendi-</u>	<u>tures</u>	<u>Expendi-</u>	<u>tures</u>
	<u>%</u>	<u>\$</u>	<u>%</u>	<u>\$</u>	<u>%</u>	<u>\$</u>
Less than \$5 000	59	203	51	244	72	121
\$5 000 - \$13 000	67	478	65	479	71	475
\$13 001 - \$23 000	74	512	74	535	72	435
More than \$23 000	77	666	77	676	76	581
All Households	75	617	75	635	74	513

Source: Statistics Canada, FAMEX, 1982

- 1 Homeowners only
- 2 Self-reported expenditures on regular maintenance and minor repairs during 1982

While the analysis of data on the need for major repair did not show a strong correlation with household income, there is evidence that lower-income households, in dwellings in need of major repair, are more likely to be unable to undertake the necessary repairs to their dwelling without assistance. These households are more likely to experience affordability problems and undertake less maintenance and repair.

Applying these findings to the number of dwellings in need of major repair previously identified indicates that the need for rehabilitation assistance may range from 175 810 (households with incomes below \$9 000) and 388 220 (households with incomes below \$16 500). One half of all dwellings in need of major repair were occupied by households with incomes below \$23 000.

3. Rationale for Public Intervention

The previous two sections have provided evidence which indicates a high and growing level of need for renovation of the country's housing stock and, less conclusively, that some households are unlikely, due to financial constraints, to undertake required renovations without government assistance. In this section, it is necessary, therefore, to consider the rationale for government intervention in this area, that is, to determine why governments should or should not play a role in the renovation of the existing stock of housing. Furthermore, consideration of the rationale for government assistance provides some guidance in identifying the consistency of various types of instruments with what is an appropriate role for government.

In order to address the issue of the role of government in renovation, three broad criteria will be used:

- a) Efficiency. Government intervention is justified to overcome market imperfections or failures which impede the most productive use of resources.
- b) Equity. Government intervention is justified to promote vertical and horizontal equity in the distribution of income or of other goods and services deemed to be essential for the well-being of society.
- c) Other government objectives. Government intervention in a particular area is justified if it promotes the achievement of other government objectives, for example, the generation of employment or conservation of energy.

The analysis in this section is based upon a literature review on the role of government in renovation and papers produced by four academics, commissioned for the purpose of the evaluation¹.

¹ The Role of Government in Rehabilitation: A Review of The Literature, Kathleen Mancor, November 1982.
Public Sector Assistance for Housing Renovation: An Economic Perspective, Allan A. Maslove, April 1983.
Government Assistance and the Rehabilitation of the Existing Housing Stock: Rationale and Conceptual Framework, Michael A. Goldberg, 1983.
Le Rôle de l'Etat Dans la Restoration et la Renovation du Logement, Pierre A. Letartre, Avril 1983.
The Role of Government in Housing Rehabilitation, Stuart Smith, April 1983.

a) Efficiency Considerations

The extent to which market imperfections and failures exist within the renovation process indicates the existence of one rationale for government involvement. It is helpful to divide the renovation process into several components: the decision to renovate, renovation financing, the renovation industry and the regulatory environment.

i) The Decision to Renovate

Positive incentives to renovation are generated if the costs of this renovation are lower than the expected returns to be gained. These returns may be in the form of increased property values, increased rental revenues, decreased operating costs, or non-financial benefits such as greater usefulness, comfort, health, safety or pleasure in a dwelling. There are, however, several impediments to the smooth functioning of this process.

First, neighbourhood characteristics have been found to have considerable influence on property values¹. An individual action to renovate, if inconsistent with actions taken on neighbouring properties, can affect the balance between costs and benefits for individual property-owners. This is illustrated in an adaptation of the classic "prisoner's dilemma" applied to renovation.

For an individual property-owner, the optimal situation, from a financial point of view, would be to achieve financial gains, at no cost, through the renovation activities of neighbours. However, the risk for the property-owner is the decrease in property value if no renovation takes place in the neighbourhood. If the individual renovates, the property value gains will be increased if the neighbours also renovate (the second best solution). In the worst case, the individual owner's investment in renovation is undermined if no other renovation occurs.

¹ Mancer, op cit p. 19

The market failure results from the need for collective action within a neighbourhood, either through unanimous agreement or large scale private land assembly. As both are improbable, the private market response to the Renovator's Dilemma is likely to be sub-optimal from a social point of view¹.

The Renovator's Dilemma is based on an assumed relationship between the costs of renovation and gains in property values. However, all renovation activities do not necessarily translate into increases in property value. Studies undertaken in the Vancouver market² found no relationship between property values (sales prices) and RRAP expenditures, regardless of the type of work (internal or external improvements) done. Renovation activities most important to the safety and useful life of a dwelling - structural, electrical and plumbing work - are least likely to be recognized as valuable improvements to a dwelling. If property-owners undertake renovations on the basis of financial motives, they may be more inclined to do cosmetic repairs or may fail to do renovation at all because of the inability to recapture costs through financial gains.

Finally, there may be significant negative consequences associated with a failure to renovate. Examples include the creation of fire or safety hazards in deteriorated dwellings, the increased potential for vandalism or simply, "eyesores" caused by

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- 1 See for example Rothenburg, J. Economic Evaluation of Urban Renewal, The Brookings Institute, 1967.
 - 2 Tucker, E.N. The External Benefits of Government Subsidized Rehabilitation Programs, unpublished M.Sc. thesis, University of British Columbia, 1983. This study did not differentiate between internal and external work. A study by Jonathan Mark and Michael Goldberg, An Analysis of the Effect of the Residential Rehabilitation Assistance Program on Housing Values, U.B.C., January, 1984, made this distinction and continued to find no relationship.

dilapidated, poorly-maintained properties. These represent costs to society which are not incurred by the property-owner and which therefore do not affect the balance of costs and benefits in the decision to renovate. It is virtually impossible to measure the magnitude of these costs or their geographical scope. They are likely limited in impact to the neighbourhood or possibly municipal level and may incur costs only when deterioration becomes extremely severe.

The above situations suggest that the market mechanism does not effectively account for all costs and benefits in the decision to renovate. What may be of greater benefit to society as a whole - preserving the health, safety and useful life of dwellings - may not be reflected in the benefits accruing to an individual property-owner. As well, the requirement for collective action to maximize benefits as demonstrated in the Renovator's Dilemma situation, is not easily attained through a market system operating on the basis of individual actions.

The second impediment to the market mechanism relates to opportunities open to landlords to recapture renovation costs through rent increases and the implications of this if they do. The absence of accelerated capital cost allowances, the inability to use allowable capital cost deductions to offset other sources of income and the absence of "soft cost" deductions for renovation work mean few incentives for rental rehabilitation are found in the tax system. As a result, renovation costs must be recaptured through increases in rents.

Rent control legislation in most provinces allows for a pass-through of "reasonably-incurred" operating costs and a return over time on major renovations. However, the existence of rent controls, insofar as it limits production of new rental stock, means there are few incentives to landlords for renovation expenditures as a way of attracting tenants. It has been argued that tight vacancy rates and the administrative burden of rent control/review

have resulted in landlords failing to undertake renovation work and decreasing maintenance expenditures because of the reduced competition in rental markets¹.

One final point to be made in the context of the decision to renovate is that the market decision process assumes perfect information. However, in housing markets which are localized and spatially separate and where households are relatively inexperienced in housing decisions regarding purchases, sales and renovations, it is not reasonable to assume perfect flows of information. A lack of information may result in reluctance to undertake the optimal amount of renovation or may cause property-owners to undertake inappropriate structural or cosmetic improvements². Hesitation to act is an indicator of the complexity of the renovation process. The difference between the new construction and existing housing situations is that in the latter, a far greater burden is placed on the property-owner to deal with the complexities of the house.

To summarize, the decision to renovate is complicated by societal costs and benefits not accruing to the decision-maker, by a market distorted through other government activities and by the absence of complete and total information. Existing studies do not permit an accurate or thorough assessment of the extent to which these market imperfections exist, or their impact on renovation.

¹ While the evidence is far from conclusive, this result was found by Mercer, J. and D. Phillips, "Residential Rehabilitation in Vancouver", Housing and People, Vol. 7, No. 4, 1976; Clark, John, A Pilot Investigation of Characteristics of Renovation/Rehabilitation Contractors, CMHC, 1980; and Skaburskis, A., Determinants of Rental Rehabilitation, CMHC, 1982. Other studies have found maintenance and repair levels unaffected by rent controls.

² Maslove, op cit.

ii) Financing Renovation

Renovations are financed through a wide variety of sources, from personal savings to second mortgages, consumer loans to charge accounts¹. To the extent that access to capital markets is required, there are potential market imperfections. However, there is general agreement that mortgage markets function well, with funds for housing made available at interest rates commensurate with risk.

Specifically with regard to renovation, there is the potential problem of spatial credit rationing (red-lining), where whole neighbourhoods are deemed too risky for mortgage lending. While this has been identified as a problem in other countries, particularly in the U.S., there is little evidence to suggest it is a major problem in urban areas in Canada. In rural and remote areas, financing for rehabilitation has been identified as a problem². However, there is little conclusive evidence that the problem is specifically related to renovation financing, rather than a general mortgage market failure.

The introduction in 1984 of a reinsurance program for renovation loans, by the Ontario government, suggests, in an indirect way, that renovation financing may present some problems. Without the reinsurance provision, the private mortgage insurance company (MICC), was unwilling to insure mortgages for renovation work. This suggests that risks on renovation activity may be higher than lenders or mortgage insurers are willing to bear. However, subsequent take-up of the program has been limited, indicating perhaps

¹ Clayton Research Associates. Survey of Lenders on Financing Home Improvements, for Program Evaluation Division, CMHC, 1985.

² Canadian Council on Social Development. Proceedings of the Canadian Conference on Housing Rehabilitation, Montreal, 1973.

that the financial market for renovation loans can operate effectively without government intervention.

There is a paucity of evidence on the extent to which financing for renovation is being effectively provided through the market. While there may exist some market imperfections in this regard, a strong case cannot be made in either direction.

iii) The Renovation Industry

Renovation on a major scale is a relatively recent phenomenon to which the construction industry is moving to adjust. Phenomena common to new construction, such as building codes, standards, builder warranties and construction technology, have not yet been fully developed in the renovation industry. For new construction, the National Building Code has been used as the model on which provincial and municipal governments have based their official building codes. Codes for renovation are far less developed, with a much more limited scope geographically. Some municipalities have introduced specific regulations for renovation. Ontario has a supplement to the Ontario Building Code which requires that any renovation must match or exceed the standards of the existing dwelling. The Associate Committee of the National Building Code has established a task force to investigate the possibility of preparing a new code document to assist regulators in the application of the NBC to existing dwellings. However, it is likely to be several years before the codes available for existing housing will be in a comparable state to those for new construction.

Standards for new construction appear in the "Residential Standards" which accompany each issue of the National Building Code. While these standards are not used officially by any regulatory authority other than CMHC, they are used unofficially by municipal building officials as a guide to good construction. Comparable standards for renovation do not exist.

Warranty programs, which are still in their relative infancy for new construction, have only been extended to the renovation market in Quebec, in 1984. Renovation warranty programs are being considered and are under study in a more general way in other provinces. When combined with the lack of controls over entry to the renovation industry and the relatively recent expansion of renovation work, the lack of warranty programs places consumers at risk in dealing with inexperienced or disreputable renovation contractors.

Technology for renovation work is also at the infancy stage. This can lead to problems such as inappropriate energy conservation measures creating moisture damage or sandblasting of brick damaging the outer enamel of the structure. Consumers who are unaware of the cost-effectiveness and health and safety aspects of particular renovation actions can be placed at financial and physical risk.

The lack of protection afforded to consumers in a newly-developing industry can be viewed as a market imperfection, at least in the immediate term, until adjustments are made to assist consumers in finding reliable renovators, ensuring reasonable costs and standards of work and obtaining protection against inadequate workmanship.

iv) Regulations

The regulatory process, particularly at the municipal level, and property tax systems have the potential for introducing distortions to the renovation market.

A number of studies have identified the municipal approval process as a constraint to renovation¹. In most cases, this relates to

¹ See for example, Toft, M., "Renovation: Where Risks Run High", Canadian Building, Jan/Feb 1982; Combes et al., Large Scale Renovation, CMHC, August, 1983; Anderson, W.G., Residential Rehabilitation and Conversion, Process and Issues, Ontario Ministry of Housing, 1980.

the procedures involved in obtaining approval for a minor variance to a municipal zoning by-law. Bureaucratic red tape and repeated delays are cited as having significant financial implications for renovation projects. It should be noted, however, that studies have focussed on only a few municipalities so that the extent to which this is a generalized problem is not known.

On municipal property taxes, theoretical studies are clear that the potential disincentive effect of the property tax on renovation exists. The standard argument is that renovation results in increased property values and this in turn results in a higher property assessment. In practice, however, this relationship between renovation work and property values is not well-established. Reassessment practices, while varying widely throughout the country, are unlikely to apply to minor renovation work and for major renovation work, because of the use of a market value approach, may bear little relationship to the renovation costs. The one potential disincentive, supported by American literature as well as Canadian officials, relates to the uncertainty associated with the renovation-property tax relationship. Behaviour may be affected by a perceived deterrent effect of the property tax, but there is little evidence to suggest the existence of a financial disincentive.

v) Summary - Efficiency Considerations

To summarize, there are several impediments to the efficient allocation of resources in the housing renovation market. At the decision-making stage, the influence of neighbouring properties, the potential impact of rent controls and the absence of complete market information can distort the relative costs and benefits of renovation. Financing renovation may be impeded by red-lining or lack of funds in specific urban neighbourhoods or rural areas. The lack of consumer protection through codes, warranties and a technically knowledgeable industry may lead to inefficient resource allocation. Finally, municipal approval processes and property taxes may inhibit renovation.

On a practical level, none of these potential impediments has been adequately measured in terms of scope or impact. The magnitude of private activity indicates that these are not all-pervasive impediments. At the same time, the outstanding renovation needs of the country suggest there are some constraints to the efficient operation of renovation markets.

b) Equity Considerations

The second criterion for assessing the rationale for government intervention is based on a government role to contribute to a more equitable distribution of income. This rationale has provided justification for the range of income transfer programs provided by the government. Economic theory is clear that unrestricted income transfers are superior to restricted or in-kind transfers in promoting an efficient redistribution of income. With this theory, the policy prescription is clear - pursue equity objectives by employing general income transfers rather than housing assistance, or more specifically, renovation assistance.

However, it is also clear that practical realities frequently dictate second-best solutions. A universal system of general income transfer does not exist in this country. The provision of housing assistance as an alternative may very well be an affordable means to contribute to government objectives for greater equity.

Furthermore, it can be argued that government pursues not just one equity objective, but several, seeking equitable access to, for example, health care, education and housing¹. Clearly, the provision of directed or in-kind transfers in this context can play a useful role.

In pursuit of an objective to ensure equitable access to housing services, governments have introduced a wide range of social housing programs. For the most part, these programs have focussed on the supply of housing, providing subsidies for the construction of rental

¹ Maslove, op cit, p. 19.

accommodation for low-income households. The cost of these subsidies varies, but is in the range of \$2 000 to \$3 000 per year for a 35 or 50 year period. It can be argued that renovation provides a cost-effective alternative to new construction for social housing purposes. A U.S. study found that rehabilitation of structures that can be upgraded to a quality level somewhat above that prescribed in the housing code is economically feasible if the total expenditure does not exceed \$7 500 (1969 prices)¹. In more general terms, rehabilitation is a cost-effective solution "if its net annual cost is less than that of new construction, after adjusting for differences in amenity achieved by the two alternative treatments."²

Empirical work of this nature has not been carried out in Canada. Capital costs of Non-Profit and Cooperative Housing, however, show that the purchase and rehabilitation of existing units is from 80 per cent to over 100 per cent less costly than new construction³. What is not measurable, in the capital cost differences, is the useful life of existing dwellings compared with new, any differences in operating costs and different amenity levels which might be provided. Data on Non-Profit and Cooperative Housing show existing units to be in poorer condition than those newly-constructed but with no significant differences in operating costs. The extent to which the condition of existing housing will affect its long-term cost-effectiveness cannot be measured in dollar terms.

Apart from capital cost differences, one can also examine the degree to which subsidies provided for renovation offer a substitute for social housing assistance. It can be postulated that, without

¹ Grigsby, W.G. and L. Rosenberg. "A Closer Look at Modest Rehabilitation" in Housing Rehabilitation edited by David Listokin, New Jersey. Rutgers University, 1983.

² Ibid, p. 96.

³ CMHC, Section 56.1 Non-Profit and Cooperative Housing Program Evaluation, November, 1983, p. 122.

renovation assistance, low-income households occupying inadequate dwellings would expand the outstanding need for social housing assistance. Low-income renters, living in inadequate housing or dwellings that are renovated privately, with consequent rent increases beyond their means, comprise a group in need of social housing assistance. For low-income homeowners, because most social housing provides rental accommodation, the link is less clear. In the current social housing programs, 21 per cent of occupants formerly owned their own dwellings. Without a renovation assistance program, it is feasible that a higher proportion of low-income homeowners would become eligible for social housing assistance. This is likely to be particularly true for senior citizens.

Low-income renters and homeowners cannot effectively compete in the market for housing services. With private renovation forces at work, low-income tenants are most likely to suffer from displacement or affordability problems if rent increases result. Low-income homeowners with little excess disposable income, are unable to afford necessary repair work and are least likely to have access to credit for financing renovations. There has been a traditional acceptance in Canadian society for a government role in assisting low-income families and individuals in need.

Government concern with equity, however, must also address horizontal equity across tenure form, that is, between homeowners and renters. For low-income households in 1977, homeowners had net worth ranging from 5 to 45 times that of renters, depending on their age category¹. One of the key factors in this difference is the equity accumulated by homeowners in their dwellings. Given equivalent levels of income, therefore, homeowners with equity accumulation cannot be considered to be equal in need to renters.

Arguments for equal or preferential treatment for homeowners have been based on societal preferences for homeownership per se. Homeowners have been seen to be more responsible, stable members of society, more likely to properly maintain their

¹ Income, Assets and Indebtedness, Statistics Canada, 1978.

dwellings and neighbourhoods. On this basis, renovation assistance to homeowners would be justified on the grounds of enabling those who had attained homeownership status to remain in their dwelling and to maintain them to a desirable level.

Summary - Equity Considerations

To summarize, government intervention to aid low-income households can be justified on the basis of equity considerations. The provision of this assistance through renovation programs can be a cost effective means of providing adequate housing to those in need. Equitable treatment of homeowners and renters would require consideration, not only of income levels, but also of net worth. Otherwise, assistance to homeowners would be based on an expressed preference for this type of tenure.

c) Pursuit of Other Government Objectives

The third criterion to assess the appropriate role for government in renovation concerns the extent to which renovation programs can be used to achieve other government objectives. In particular, renovation activities can be used to pursue objectives of employment creation and energy conservation.

Renovation is a labour intensive activity. Employment impacts of expenditures on construction are of three types:

"Direct impacts - the actual jobs and income resulting from work on the construction projects themselves (including both on-site and off-site work);

Indirect impacts - the jobs and incomes created in other industries in order to produce the materials and other inputs necessary for the construction work; and

Induced impacts - the jobs and income created in the total economy as a result of the so-called "Keynesian Multiplier", i.e. the income and employment impacts throughout the economy resulting from the expenditures (direct and indirect) of the incomes generated to households in the first two rounds."¹

¹ Clayton Research Associates Limited. Renovation Construction - Economic Impacts, August, 1984.

A recent study, by Clayton, of the employment effects of housing renovation showed that the direct employment generated by a \$100 million expenditure on renovation is about 2 650 person-years compared with 1 438 person-years generated by a similar expenditure on total (new, repair and renovation) residential construction¹. Indirect impacts for renovation were lower than for total construction, due to the lower requirements for materials, but this did not offset the effect of higher direct impacts. Induced impacts of renovation were also found to be higher than for total residential construction. In total, for a \$100 million expenditure, about 1 200 more person-years of construction industry employment resulted from the renovation estimates than from the total residential construction estimate.

Renovation has a number of other characteristics that make it attractive as an employment generation tool. First, as found in the Clayton study, impacts of renovation are more localized than those of new construction, mainly because of the greater use of labour over materials. Second, renovation is subject to fewer seasonal variations than new construction. Third, there is a relatively quick response time to the injection of funds for renovation, as planning and approval processes are less extensive than for new construction.

While the incremental effects of renovation grants on job creation are beyond the scope of this study,² the potential for renovation to contribute to employment generation provides an additional rationale for government intervention through this means.

Renovation also can be used to promote energy conservation. Improvements to heating systems, building structures and the building envelope can result in improved energy efficiency of dwellings. While standards for energy efficiency have been included in codes for new construction, these have not yet been developed for existing buildings.

1 Ibid. p. 10.

2 They will be addressed in forthcoming evaluations of CMHC job creation programs.

However, housing renovation provides a timely opportunity to undertake energy-saving improvements in conjunction with other repair activities.

Summary - Other Government Objectives

Insufficient analysis on the contribution of renovation to other government objectives vis-à-vis alternative means of addressing these goals has been conducted to justify this as a major rationale for renovation. It can be concluded that renovation can be used to pursue these objectives, although the cost-effectiveness of doing so has not been definitively assessed.

d) Summary of the Rationale for Renovation Assistance

On a theoretical level, a justification for government action on the basis of efficiency, equity and pursuit of other government objectives can be developed. In each of these areas, the lack of empirical evidence prevents definitive conclusions. On the efficiency side, the potential market imperfections associated with externalities, financing, the building industry and municipal regulations can be identified, but their impact and magnitude have not been measured. Similarly, equity considerations suggest a role for government in providing housing assistance to low-income households. The cost-effectiveness of renovation as opposed to new construction housing assistance has not been proven. The justification for assisting homeowners rather than renters necessitates a normative assessment of the desirability of assisting a particular form of tenure, as well as a measure of the degree to which renovation offers an alternative to traditional social housing programs. Pursuit of job creation and energy conservation objectives can be achieved through renovation, although an assessment of this tool compared with other alternatives has not been made.

B. Logical Links

The preceding sections of this chapter of the evaluation have demonstrated that there exists a need for a rehabilitation program: there are a large number of dwellings which are currently and will, in the future, be in need of major repair, about half of these dwellings are occupied by households which are, and

will be, likely unable to afford to repair their dwelling, and a role for government intervention can be justified on the basis of equity considerations and possibly on criteria of efficiency and support for other government objectives.

The federal government's main response to this need is the Residential Rehabilitation Assistance Program. In this section, the conceptual links between the need for a rehabilitation program and the design features of RRAP are examined. The stated objectives of the program are used to define the dominant concepts, which should be reflected in the specific design mechanisms of the program. Whether the desired results are being achieved and the program has, in fact, responded to the demonstrated needs and roles, will be evaluated in subsequent chapters of this report.

Table 3.9 shows the program design features which are in place to respond to the needs expressed in the program objectives. Each of the concepts expressed in the objectives appears to be logically linked to one or more specific design features. This does not mean, however, that the objectives are, or are not, being achieved.

The objective of providing assistance to residents contains three concepts; assistance, substandard housing and need. It is operationalized by several design features which are logically linked to the objective. Assistance is provided to homeowners in the form of loans and forgivable loans. The amount of forgiveness available is based on household income to ensure equitable treatment across income groups. The program recognizes the more severe need and higher costs demonstrated in rural areas. Recognizing that the landlord receives the assistance while the tenants live in the dwellings, the RRAP Rental Agreements attempt to ensure that the tenants receive assistance, as well. The housing quality, safety and useful life objectives, operationalized through the RRAP Standards and delivery process, reflect government considerations of efficiency (only necessary work is funded), equity (equal treatment) and other objectives (energy conservation).

At the conceptual level, potential problems affecting objectives achievement can be identified because the logical linkages to program design are absent. There is no mechanism in place to deal with cases of partial RRAP, that is, where maximum forgiveness does not cover

total costs and the applicant cannot afford any repayable loan. Similarly, the useful life of the dwelling and the quality of maintenance practices may be impaired if, after RRAP, the household is still unable (or unwilling) to undertake basic upkeep of the RRAP investment. Targetting may be impaired by the absence of controls for homeowner equity and tenant income.

A detailed evaluation of the achievement of the program objectives is reported in Chapter IV. Program design elements are examined in Chapter V and the impacts and effects of the program are investigated in Chapter VI.

TABLE 3.9

RELATIONSHIP BETWEEN PROGRAM OBJECTIVES AND PROGRAM DESIGN

Objective	Rationale	Concept	Program Design Feature	Potential Problems Affecting Achievement
To provide assistance to residents living in substandard housing on the basis of need.	Outstanding requirements for assistance. Government concern with equity.	Assistance	Loans and forgivable loans Rental Agreements	Partial RRAP (i.e. not enough forgiveness) Enforcement of rental agreements
		Substandard Housing	Qualifying criteria Delivery process including inspections Designated areas	Operationalization of criteria Interpretation of standards
		Need	Income testing for forgiveness. Decreasing forgiveness as income rises. Capital Budget Control Plan (needs based allocation process). Different loan and forgiveness limits for rural worst first in Rural RRAP	Regional differences No inclusion of homeowner equity. No controls on targetting to needy tenants. Designated areas may restrict targetting.
To improve substandard housing to an agreed level of health and safety	Mechanisms not in place in private sector to ensure health and safety after repairs	Health and Safety	RRAP Standards	Interpretation of standards Compatibility with other jurisdictions
To ensure that the quality of repair and improvement substantially extends the useful life of each housing unit	Cost-effective use of government resources	Quality of Repair and Improvement	RRAP Standards Delivery process including inspections	
		Useful Life	Monitoring inspections Earning of forgiveness over time	Affordability of future rehabilitation/maintenance
To promote an acceptable level of maintenance of the existing housing stock	Link exists between maintenance and depreciation	Maintenance	Maintenance and Occupancy Bylaw requirement	Follow-up and bylaw administration



IV. OBJECTIVES ACHIEVEMENT

Introduction

In this chapter of the evaluation, the performance of the program will be assessed in terms of the achievement of the program objectives. As discussed earlier, there are four broad objectives for RRAP:

1. to provide assistance to residents of substandard housing on the basis of need;
2. to improve substandard housing to an agreed level of health and safety;
3. to ensure that the quality of repair and improvement substantially extends the useful life of each housing unit;
4. to promote an acceptable level of maintenance of the existing housing stock.

The relevant concepts underlying each objective will be identified. While each generally deals with a different aspect or element of the program there are areas of overlap between objectives. The first objective deals with the RRAP recipient and includes concepts of need, both affordability and assistance. The second objective deals with the dwelling unit, specifically its improvement, and includes concepts of standardness, health and safety. The third objective deals with the RRAP work itself and considers the quality of the work and the extension of the useful life of the dwelling. The fourth objective deals with the ongoing maintenance of the dwelling.

The concepts will be operationalized through the identification of quantifiable measures and evaluation criteria. The analysis approach is to specify hypothesized relationships and to use descriptive and comparative statistics to test the hypotheses. For most issues the performance of the program is assessed against a measure of the general population or some specified subpopulation, for example dwellings in need of major repairs. Data sources and statistical tests will be identified at each stage of the analysis. Appendix 1 contains descriptions of each data base used in the evaluation.

For all parts of the analysis, findings will be presented for the program as a whole, by tenure, by rural/urban location and by region. In most cases, more detailed analysis was undertaken during the course of the evaluation. Other variables were considered including building age, age of the household head, mortgage status, family status and economic status. Where

significant relationships were observed, the findings are presented in more detail and the specific relationships are identified in the text.

A. Assistance to Residents

The first objective of RRAP is to provide assistance to residents in substandard housing on the basis of need. The analysis of this objective will consider the concepts of need and assistance.

1. Need

Three measures of need will be examined. The first, household income, is a standard measure and the one which is used by the program in determining the type and amount of assistance which is available to the household. The second, affordability, is a measure of the household's ability to pay for the rehabilitation work required. The third measure is wealth which includes not just available income but other resources or assets of the household.

i) Income

It is easy to conceptualize that the lower one's income the greater will be the need for assistance in rehabilitating the dwelling. RRAP is targetted towards low income households. The following two hypotheses can be tested:

- a) The average income of RRAP clients is lower than the average income of the general population of dwellings in need of major repair.
- b) The second income quintile cutoff for RRAP clients is lower than for the general population of dwellings in need of major repair.

The RRAP client survey provides a measure of household income in 1982 for the RRAP recipients. HIFE 82 will constitute the source of information on household income for the general population of Canadians reporting that their dwelling was in need of major repair¹.

Table 4.1 shows a comparison of the average income for RRAP clients and for the general population in dwellings in need of major repair. Overall, 1981 RRAP homeowner clients declared a 1982 average income \$12 563 less than the comparative general population group; a difference of 45 per cent of the general population income. Targetting to lower income households was more effective in urban areas than in rural areas, even though average income was lower in rural areas. RRAP was not as well targetted in Atlantic Canada as in other regions and was most effectively targetted in Ontario.

A multiple regression using income as the dependent variable revealed that, when controlling for other variables, there was a very significant difference in income between RRAP clients and the general population in dwellings needing major repair, of approximately \$5 000.

¹ Income is difficult to measure and it is recognized that surveys may not be the best way to measure household income. It is known that respondents to surveys tend not to answer income related questions and that self-administered questionnaires tend to over-represent higher income groups. In the case of the RRAP surveys, the response rate to the income question was as high as 83 per cent and the composition of the survey universe (high proportion of low-income households) reduces the self-selection problem. The RRAP administrative file contains the income reported to the RRAP delivery agent at the time of application. Even if it were verified, it represents an estimation of the expected income for the year while the survey measured the actual income figure. The survey measured income was chosen on these grounds. Moreover, the universe measure (HIFE) used here is also a survey measure and is consequently more easily compared to the RRAP survey than to the RRAP administrative file.

TABLE 4.1

AVERAGE INCOME - HOMEOWNERS

Group	HIFE (1) \$	N	RRAP \$	N	DIFFERENCE (2) \$	PROB
ALL	27 778	3 903	15 215	1 032	-12 563	**
Urban Areas	30 332	2 091	17 339	375	-12 993	**
Rural Areas	21 933	1 812	14 214	655	-7 719	**
Atlantic	20 295	1 290	14 316	354	-5 979	**
Quebec	26 562	508	15 397	172	-11 165	**
Ontario	30 779	716	14 692	126	-16 087	**
Prairies	26 873	1 076	16 026	243	-10 847	**
British Columbia	30 607	313	16 307	137	-14 300	**

Source: HIFE 82, RRAP Homeowner Survey 1982

1. Homeowners living in dwellings in need of major repair only.

2. Negative values indicate a lower income for RRAP clients.

* T significant at the 0.05 level.

** T significant at the 0.01 level.

Tables 4.2 and 4.3 present the comparison of incomes for RRAP tenants and the general population of tenants reporting that their dwelling was in need of major repair. Table 4.2 shows the distribution of Canadian tenants reporting major repair need and RRAP tenants by income classes. A statistically significant difference was found between the two distributions. Of the general population group, 38 per cent have incomes equal to or less than \$15 000 (in 1984 dollars), while more than half (52%) of RRAP tenants are in this income group. One third of the general population have incomes greater than \$25 000 while only 22 per cent of the RRAP tenants are in this group.

TABLE 4.2

DISTRIBUTION OF INCOME GROUPS - TENANTS

Group	HIFE %	RRAP %
\$ 0 - \$ 5 000	7	9
\$ 5 001 - \$10 000	17	24
\$10 001 - \$15 000	14	19
\$15 001 - \$20 000	13	15
\$20 001 - \$25 000	14	11
\$25 001 - \$30 000	10	8
\$30 001 - \$35 000	9	7
\$35 001 - \$40 000	5	3
Above - \$40 000	10	4
TOTAL	99	100
N	1 319	916

Source: HIFE 82, RRAP Tenant Survey 1984

Note: Chi square = 69.6, degrees of freedom = 13,
probability = .0001, gamma = -0.21

Table 4.3 shows the average income for both groups, and the difference between the RRAP tenants and the general population. Overall, RRAP tenants reported incomes, on average, which are \$5 000 less than those of the population of tenants in dwellings needing major repairs. The RRAP tenants showed statistically significant lower incomes in all subgroups except the Atlantic and Prairie regions. Targetting was more effective in rural areas than in urban areas. A multiple regression controlling for other variables revealed a significant difference in income of \$3 500 favouring the non-RRAP group.

TABLE 4.3
AVERAGE INCOME - TENANTS

Group	HIFE (1) \$	N	RRAP \$	N	DIFFERENCE (2) \$	PROB
ALL	22 115	1 319	17 237	916	-4 878	**
Urban Areas	22 111	1 039	18 007	686	-4 104	**
Rural Areas	22 144	280	14 845	216	-7 229	**
Atlantic	20 234	257	18 120	195	-2 114	ns
Quebec	20 065	253	14 671	398	-5 395	**
Ontario	23 080	269	19 191	146	-3 888	**
Prairies	23 729	394	21 566	114	-2 162	ns
British Columbia	24 594	146	18 352	63	-6 242	**

Source: HIFE 82, RRAP Tenant Survey 1984

1. Tenants living in dwellings in need of major repair only.

2. Negative values indicate a lower income for RRAP clients.

* T significant at the 0.05 level.

**T significant at the 0.01 level.

Table 4.4 presents the proportion of homeowner RRAP clients with incomes below the second income quintile (40%) cutoff for the general population in dwellings in need of major repair. The second quintile cutoff is adjusted for each subgroup. The major findings of Table 4.1 are corroborated here.

TABLE 4.4
INCIDENCES OF INCOMES BELOW SECOND QUINTILE CUTOFF - HOMEOWNERS

Group	HIFE(1) N	RRAP INCIDENCE	N	PROB
ALL	3 178	80.2	1 039	**
Urban Areas	2 212	77.5	330	**
Rural Areas	996	70.3	707	**
Atlantic	425	66.5	344	ns
Quebec	736	80.6	344	**
Ontario	1 202	86.6	57	ns
Prairies	493	78.1	157	ns
British Columbia	323	76.4	136	**

Source: HIFE 82, RRAP Homeowner Survey 1982

1. Incidences are 40 per cent by definition.

* Likelihood ratio chi square significant at the 0.05 level.

** Likelihood ratio chi square significant at the 0.01 level.

For homeowners, 80 per cent of RRAP clients reported incomes below the second quintile of the general population. The incidence in rural areas was less than in urban areas. The Atlantic region had a lower incidence than other parts of the country.

RRAP clients earn significantly less than the group of Canadians living in dwellings in need of major repair. Overall, the difference is \$12 500 for homeowners and \$5 000 for tenants. When standardized for family composition, housing quality, settlement size and economic status, the difference is still \$5 000 for homeowners and \$3 500 for tenants.

For RRAP homeowners, 80 per cent have incomes below the bottom 40 per cent of the general population in dwellings in need of major repair.

ii) Gross Debt Service Ratio

A widely used criterion to judge the housing burden on a household is the ratio of Gross Debt Service (GDS) to household income (see Appendix 2 for a description of the measure of this concept). One measure of the targetting of RRAP to households with affordability problems is a GDS ratio for clients which is significantly higher than that observed in the general population. The following two hypotheses can be tested:

- a) The average GDS ratio of RRAP recipients is higher than that of the general population;
- b) The incidence of high GDS ratios is greater among RRAP clients than in the general population.

Data needed to calculate the GDS ratio of RRAP recipients is available from the RRAP Homeowner Survey. A general population measure, in principle, should calculate the GDS ratio for households living in dwellings in need of major repair. However, no data source provides both the need for repair information and the housing cost and income data needed to calculate the GDS ratio. As a result, for this analysis, the FAMEX survey, which provides information representing all Canadian homeowners, has been used. This means that the difference in GDS between the two groups will tend to be overstated.

Table 4.5 shows the mean GDS ratios and the difference between the means of the two groups and subgroups. Overall, the mean GDS ratio for RRAP clients was greater than that for the general population by 4.0 percentage points. The difference varies from one subgroup to another; however the GDS ratios for RRAP clients are consistently higher than those for the corresponding general population subgroup.

TABLE 4.5

AVERAGE GDS RATIO - HOMEOWNERS

Group	FAMEX		RRAP		DIFFERENCE	PROB
	%	N	%	N		
ALL	17.2	6 744	21.2	707	4.0	**
Urban Areas	17.7	5 723	22.1	248	4.4	**
Rural Areas	14.5	1 021	20.7	457	6.2	**
Atlantic	15.2	1 455	22.2	251	7.0	**
Quebec	15.3	1 109	20.5	124	5.2	**
Ontario	18.6	1 659	22.8	89	4.2	*
Prairies	17.9	1 664	18.9	156	1.0	ns
British Columbia	19.0	857	21.5	87	2.5	ns

Source: FAMEX 82, RRAP Homeowner Survey 1982

* T significant at the 0.05 level.

** T significant at the 0.01 level.

The difference is larger in rural areas than in urban areas. In the Atlantic region, the difference is the largest at 7 points between the two means. Ontario follows at 5.2 points with Quebec next at 4.2 points. West of Ontario, there is no statistically significant difference in GDS ratios between the two groups.

A multiple regression using GDS ratio as the dependent variable was used to control for differences between the two groups. When family composition, housing quality, economic status and rural/urban location were held constant, the difference in GDS ratios between RRAP clients and the general population was estimated at 5.2 percentage points. This is a better estimate of the actual difference as it reduces the discrepancies between the two data sources.

The proportion of households with high GDS ratios can also be used as a measure of the targetting of the program towards households in need of assistance. A threshold GDS ratio of 30 per cent, which is a common measure of housing affordability, was used to define a high ratio. Table 4.6 shows the incidence of households with high GDS ratios for RRAP recipients and for the general population. Overall, 20.4 per cent of RRAP recipients showed a high GDS ratio compared to 11.4 per cent of the general population. Again, the incidence of higher ratios for the RRAP clients was consistent for all subgroups where a significant difference was observed. The same urban/rural and regional pattern shown for mean GDS ratio was observed for high GDS ratio.

TABLE 4.6
INCIDENCE OF HIGH GDS RATIOS(1) - HOMEOWNERS

Group	FAMEX		RRAP		DIFFERENCE	PROB
	%	N	%	N		
ALL	11.4	6 744	20.4	707	9.0	**
Urban Areas	11.9	5 723	21.8	248	9.9	**
Rural Areas	8.5	1 021	19.5	457	11.0	**
Atlantic	7.4	1 455	24.3	251	16.9	**
Quebec	6.7	1 109	17.7	124	11.0	**
Ontario	13.9	1 659	22.5	89	8.6	ns
Prairies	13.4	1 664	13.5	156	0.1	ns
British Columbia	15.6	857	23.0	87	7.4	ns

Source: FAMEX 82, RRAP Homeowner Survey 1982

1. Gross Debt Service/Income greater than 30 per cent.

* T significant at the 0.05 level.

** T significant at the 0.01 level.

A logistic regression controlling for family composition, housing quality, economic and urban/rural location confirmed that the incidence of high GDS ratios was greater for RRAP recipients than for the general population. RRAP clients are twice as likely to have a high GDS ratio, all other factors held constant.

It is clear that a difference exists between the GDS ratios of RRAP recipients and the corresponding measure in the general population.

The average GDS ratio of RRAP recipients, at 21.2 per cent, was 4 percentage points higher than the average for the general population. RRAP recipients were twice as likely to have a high GDS ratio than the general population. One fifth of RRAP recipients had GDS ratios over 30 per cent.

iii) Poverty Threshold

An additional measure of a household's need for assistance in paying for necessary repair work to its dwelling is based on the concept of poverty thresholds. As RRAP is targetted towards households in need, the following hypothesis can be tested:

There are more households living under the poverty threshold in the RRAP client group than in the group of Canadians living in dwellings in need of major repair.

Defining poverty is not easy. For the purposes of the evaluation the poverty thresholds used were based on an approach used by the Canadian Council on Social Development. This approach calculates thresholds as one half of the average income amounts for various family sizes and settlement sizes.¹ The RRAP Homeowner Survey provides the necessary information for calculating a comparable income figure. The general population was dwellings in need of major repair from the HIFE database. The analysis is limited to homeowners only as no data is available to determine the poverty status of RRAP renters.

Table 4.7 shows the incidence of households below the poverty threshold for the general population in dwellings in need of major repair and for RRAP recipients and the difference between the two groups. Overall, 22 per cent of the general population group can be placed under the poverty threshold while 56 per cent of RRAP recipients show the same characteristic.

¹ Other approaches examined were the Statistics Canada cutoffs and the approach of the Senate Special Committee on Poverty. The CCSD approach was chosen as it generated thresholds which were between the other two approaches.

TABLE 4.7

HOUSEHOLDS BELOW POVERTY THRESHOLDS(1) - HOMEOWNERS

Group	HIFE		RRAP		DIFFERENCE	PROB
	%	N	%	N		
ALL	21.8	3 179	56.4	1 039	34.6	**
Urban Areas	15.6	2 212	43.7	330	28.1	**
Rural Areas	36.0	966	62.4	707	26.4	**
Atlantic	37.9	425	62.4	344	24.5	**
Quebec	26.8	736	57.7	344	30.9	**
Ontario	14.7	1 202	53.1	57	38.4	**
Prairies	22.7	493	49.3	157	26.6	**
British Columbia	14.3	323	47.7	136	33.4	**

Source: HIFE 82, RRAP Homeowner Survey 1982

1. Homeowners living in dwellings in need of major repair only.

* Chi square significant at the 0.05 level.

** Chi square significant at the 0.01 level.

This is a very significant finding both statistically and substantively. More than one half of the RRAP recipients live below the poverty line. A RRAP household was 2.5 times more likely to live below the poverty line than a household in the general population of dwellings in need of major repair. This finding is consistent for all subgroups. The difference is particularly great in Ontario and is relatively smaller in the Atlantic region.

RRAP homeowners have less income than the comparable general population. As shown in Table 4.8, above the poverty line, RRAP clients had over one third less income. For the group below the poverty line, however, RRAP was not as effective in reaching the lowest income groups. The average income for RRAP clients below the poverty threshold was 5 per cent higher than the corresponding measure in the general population.

TABLE 4.8

MEAN INCOME AND POVERTY THRESHOLD - HOMEOWNERS

Group	HIFE		RRAP		Diff	Signif
	Mean Income \$	N(1)	Mean Income \$	N		
Below Poverty Threshold	8 823	693	9 322	586	499	*
Above Poverty Threshold	33 066	2 485	22 849	453	-10 217	**

Source: HIFE 82, RRAP Homeowner Survey 1982

1. Data are weighted.

* T significant at the 0.05 level

**T significant at the 0.01 level

RRAP clients are clearly drawn disproportionately from the group of households living below the poverty line. However, below the poverty line, the program is not as effective in reaching the households with the lowest incomes.

iv) Equity

The need for assistance can also be indicated by the amount of equity accumulated in an owned dwelling and the extent to which this equity can be translated into cash required to carry out necessary repairs. It must be noted, however, that even though some homeowners may be equity rich, their income does not necessarily permit them to make payments on any additional housing debt while maintaining a Gross Debt Service ratio below 30 per cent.

A measure of the need for assistance among RRAP clients would consider the amount of equity available and the ability to assume additional housing debts. Thus, the following two hypotheses can be tested:

- a) RRAP homeowner clients have equity available in their dwelling;
- b) RRAP homeowner clients with available equity can not assume any meaningful new housing debt.

The RRAP Homeowner Survey contains information on the estimated dwelling value and mortgage load for the calculation of equity amount. For comparative purposes only, equity amounts for a general population group of homeowners can be calculated from FAMEX. This database, however, represents all households and does not differentiate between levels of need for repair. Since the comparison to the general population is incidental to the testing of the hypotheses, the FAMEX database can be used.

The second hypothesis uses a combined database containing information on RRAP homeowner recipients. The cost of the RRAP work comes from administrative data while the RRAP Homeowner Survey provides shelter costs and income for the calculation of GDS ratio.

Table 4.9 shows the comparison of average equity amounts for RRAP homeowner recipients and for the general homeowner population. It can be seen that, while significant differences exist between the program recipients and the general population, RRAP recipients still hold substantial amounts of equity in their dwellings. Overall the average equity amount for RRAP homeowners is \$35 969. The amount is substantially less for rural homeowners and increases with age of the household head.

TABLE 4.9
COMPARISON OF AVERAGE EQUITY - HOMEOWNERS -
BY AGE OF HOUSEHOLD HEAD

Group	FAMEX		RRAP		PROB
	\$	N	\$	N	
All	55 117	6 499	35 969	872	**
40 years	41 429	2 166	24 493	221	**
40-65 yrs	63 437	3 253	40 763	311	**
65 years	57 399	1 081	42 074	238	**
Urban					
40 years	43 212	1 801	28 873	80	**
40-65 yrs	66 292	2 819	47 206	114	**
65 years	62 228	894	47 949	106	**
Rural					
40 years	36 758	365	22 687	141	**
40-65 yrs	54 133	433	37 998	195	**
65 years	44 427	187	37 651	132	ns

Source: FAMEX 82, RRAP Homeowner Survey 1982

** Difference significant at the 0.01 level.

RRAP homeowners have substantial amounts of equity, on average, in their dwelling. But, would they have the capability to finance their repairs using this equity? The second hypothesis tests these clients' ability to assume additional housing debt. Two criteria have been assumed. First, equity of at least 50 per cent of the value of the dwelling is required in order to qualify for additional financing.¹ Second, the household must have a GDS ratio of less than 30 per cent in order to afford additional housing costs.

Table 4.10 shows the effect of these two criteria on RRAP homeowners. Almost 90 per cent of RRAP homeowner clients have equity of more than 50 per cent of the value of their dwelling. Slightly less, 80 per cent, have GDS ratios less than 30 per cent. Taken together, 73 per cent of RRAP homeowner clients would meet both the equity and GDS criteria for assuming additional housing debt.

TABLE 4.10
EQUITY AND GROSS DEBT SERVICE RATIO - RRAP HOMEOWNERS

	EQUITY	
	50% and more	Less than 50%
GDS		
30% and More	15%	5%
Less than 30%	73%	7%

Source: RRAP Homeowner Survey 1982

Table 4.11 presents some characteristics of these RRAP homeowners who, according to the two criteria above, should be capable of assuming additional housing debt. All of them could have covered the cost of their repairs from their equity without reducing that equity to less than 25 per cent of the value of the dwelling. After subtracting the average repair cost of \$3 892, they would still have had \$30 097 in equity on average. Finally, 75 per cent of these households could make at least \$100 more per month available for additional housing payments before their GDS ratio would

¹ This figure will produce a conservative estimate of the number of clients who could qualify by virtue of equity alone.

exceed 30 per cent. While this figure is an average, a more revealing figure is that three quarters of this group would be able to pay \$96 more per month for housing.

TABLE 4.11

ABLE TO TAKE ON ADDITIONAL DEBT(1) - RRAP HOMEOWNERS

Mean Income	\$15 631
Mean Available Equity	\$30 097
Mean GDS Ratio	13.5%
Mean Cost of Repairs	\$ 3 892
Equity Greater than Repair Cost	99%
Money Available (mean)	\$241/month(2)

Source: RRAP Homeowner Survey 1982

1. Equity of at least 50 per cent of dwelling value and GDS less than 30 per cent of household income.
2. Difference between GDS of 30 per cent and current GDS.

Comparing the actual cost of work undertaken with RRAP and the amount of additional money which could be available from the clients' equity revealed that over half (56%) of RRAP homeowner clients could have financed their repairs from equity without exceeding a GDS ratio of 30 per cent.

RRAP homeowner clients have sizable amounts of equity in their dwellings. Although less than the general population, the average equity amount for RRAP clients is more than \$35 000. Almost 90 per cent had more than half the value of their dwelling in equity. Over one half of homeowner clients could have financed the cost of their repairs by borrowing against their equity without assuming an unreasonable debt load.

v) Summary

This section provided evidence on the extent to which RRAP targetted assistance to households in need. Four indicators were used to measure the extent of need among RRAP households.

RRAP homeowner clients were found to have significantly lower incomes than those Canadians living in dwellings in need of major repair: \$12 500 less on average overall and \$5 000 less when controlling for socio-economic characteristics. Eight clients out of ten fell

below the second income quintile cutoff of the general population.

The program was not as well targetted to lower income tenants. Tenants of RRAPed units had incomes, on average, of \$5 000 less than comparable tenants in the general population. When controlling for the effects of other socio-economic variables, this difference was reduced to only \$3 500.

The Gross Debt Service ratio for homeowner clients was analysed. It was found that 20 per cent of the homeowner clients had a GDS ratio greater than 30 per cent, more than double the proportion in the general population. Overall the GDS ratio for RRAP recipients was between 5 and 7 percentage points higher than the general population.

It was demonstrated that more than half the clients live below the poverty line compared to 20 per cent in the general population of dwellings in need of major repair. Within the group of people living below the poverty line, it was found that RRAP was not serving the lowest income households; the average income of the RRAP clients was higher than that of the comparable general population group.

RRAP homeowners possessed significant equity in their dwellings even though the amount is significantly lower than that possessed by the general population of homeowners. It was also estimated that half of the 1981 clients were financially capable of repaying a mortgage loan which would have covered the repair costs. The other half either did not have sufficient equity in their dwellings or were not able to afford the monthly payments that the loan would have required.

2. Assistance

i) Affordability

In order for the program to assist recipients, it must not create affordability problems for them. It should be noted that the program does not attempt to improve the financial status of the recipients, only the physical condition of their dwelling. In a number of cases, however,

participation in RRAP requires the acceptance of a repayable portion of the RRAP loan which puts an additional burden on the household debt and increases the GDS ratio. Therefore, for homeowners, the following hypothesis can be tested:

The post-RRAP GDS ratio of clients is not significantly higher than the pre-RRAP measure.

The same measure of GDS ratio discussed in Section 1.ii will be used for this analysis. The RRAP Homeowner Survey contains the post-RRAP GDS and the amount of the payments, if any, on the RRAP loan. The pre-GDS ratio can be calculated by subtracting the payments from the GDS calculation.

For tenants, comparative GDS measures are not available because the RRAP Tenant Survey obtained data on incomes by income class. This reduces the reliability of the calculation of GDS for tenants so that it is unusable. Consequently, an objective measure of rent increase will be used jointly with a subjective measure of the severity of the increase.

A regression analysis on post-RRAP GDS ratio using pre-RRAP GDS ratio as the predictor, found a very good fit in the model. As shown in Table 4.12, the model showed that, on average, the difference in pre and post GDS ratios was one percentage point. The same difference was observed for urban and rural cases. The highest increases were observed for the lowest pre-RRAP GDS ratios, although again, the overall differences are not large.

TABLE 4.12

PRE- AND POST-RRAP GDS RATIOS - HOMEOWNERS

	Post-RRAP GDS Ratio %	Estimate of Difference %	N	Signif
All Cases	21.1	1.2	696	***
Urban Cases	21.7	1.1	239	***
Rural Cases	20.8	1.3	456	***

Source: RRAP Homeowner Survey 1982
RRAP Administrative Data

Note: Results of a regression of Pre-RRAP GDS on Post-RRAP GDS.
*** Significant at the 0.001 level.

The data on rent increases for tenants is presented in Table 4.13. The mean rent increase for each income group is shown for the period immediately after RRAP and from the time of RRAP to 1984. The rate of increase is from 14 to 24 per cent immediately after RRAP and from 26 to 36 per cent within the first year after RRAP. This works out to an average increase of between \$36 and \$62 and between \$65 and \$108, respectively.

TABLE 4.13

POST-RRAP RENT INCREASES - TENANTS

Income Groups	Increase Up To October 1984			Increase Immediately After RRAP		
	Mean \$	%	N	Mean \$	%	N
Overall	68	32	245	50	32	245
\$ 0 - \$ 5 000	55	36	19	43	24	22
\$ 5 001 - \$10 000	78	35	65	48	20	73
\$10 001 - \$15 000	65	29	45	55	20	51
\$15 001 - \$20 000	81	33	24	45	17	32
\$20 001 - \$25 000	87	37	26	42	16	28
\$25 001 - \$30 000	71	26	22	36	14	24
\$30 001 - \$35 000	108	32	11	62	21	14
\$35 001 - \$40 000	160ns	-	2	50ns	-	2
\$40 001 - \$45 000	150ns	-	1	150ns	-	2
\$45 001 - \$50 000	65ns	-	2	63ns	-	2
\$50 001 - \$55 000	25ns	-	1	25ns	-	1

Source: RRAP Tenant Survey 1984

The average increase in Homeowner GDS ratio as a result of the RRAP loan repayments was 1 per cent taking the average GDS ratio from 20 per cent to 21 per cent. Moreover, clients with the highest pre-RRAP GDS ratios experienced the smallest increases. Homeowner RRAP creates very few affordability problems for recipients.

For all tenants, within the first year, likely when leases were renewed, rent increases averaging \$68 were incurred. The amount was unrelated to income. Between one third and one half of tenants with incomes less than \$10 000 considered their increase a serious financial problem.

ii) Importance of Assistance

An additional measure of the extent to which RRAP provides assistance to recipients, is whether the program has been an important factor in enabling them to undertake repairs. If the RRAP assistance were not an important factor then the program may be assisting those who do not need assistance. The hypothesis which can be tested is:

The availability of government assistance was a major factor in the client's decision to undertake the repair work.

The RRAP Client Surveys contained a question on how important a factor the availability of government assistance was in the decision to undertake the rehabilitation work.¹ As it is self-reported it probably shows a bias towards positive attitudes. However it still constitutes a useful indicator, although it cannot be compared to any other population. A similar question pertaining to the impact of government assistance on the decision to undertake future work was also asked and will also be referenced here.

Overall, no less than half of both homeowners and landlords considered RRAP to have been a very important factor in undertaking the rehabilitation work, (5, 6 or 7 on scale) while no less than 74 per cent considered it to have been an important factor (4 or more). Correspondingly, one quarter of the recipients, both homeowners and landlords, would have undertaken all or at least some of the repairs without financial assistance through RRAP (1, 2 or 3 on scale). This finding holds for both current (1981) and historical (1975-1978) RRAP clients. As shown in Table 4.14, there is very little variation across RRAP client subgroups.

¹ Homeowner and Landlord Question

How important a factor was the availability of RRAP funds in affecting your decision to have this work done under RRAP? Consider only the RRAP work in answering this question.

1	2	3	4	5	6	7
Not Important (not a factor in my plans and I would have done it anyway)	Somewhat Important (would have done about half the work)			Extremely Important (would not have done any of the work without RRAP)		

TABLE 4.14

IMPORTANCE OF GOVERNMENT ASSISTANCE - HOMEOWNERS AND LANDLORDS - PAST AND FUTURE

Importance	Past Work		Future Work	
	Homeowners %	Landlords %	Homeowners %	Landlords %
Not Important (1,2,3)	5	11	25	32
Would Have Done/ Would do Half (4)	16	14	17	16
Very Important (5,6,7)	79	75	58	52
N	1 088	194	785	107

Source: RRAP Homeowner and Landlord Surveys 1982.

For recipients planning future repairs, the availability of government assistance was not as important to their plans. Only one third indicated that assistance would be very important, while just over half rated assistance as important.

As shown in Table 4.15, the importance of the RRAP assistance in the homeowner's decision to rehabilitate is related to income. Homeowners rating the assistance to be of high importance had significantly lower incomes than those giving a lower importance rating to the assistance. It appears that RRAP is assisting some higher income homeowners who do not need assistance.

TABLE 4.15

RELATIONSHIP BETWEEN IMPORTANCE OF RRAP ASSISTANCE AND INCOME - HOMEOWNERS

Importance	Average Income	N
Low	\$16 283	39
Middle	\$16 136	137
High	\$11 599	752

Source: RRAP Homeowner Survey 1982

Almost three-quarters of RRAP clients (homeowners and landlords) considered the RRAP assistance to have been important to their decision to undertake the rehabilitation work. About one quarter, however, indicated that they would have done all or at least some of the work without the assistance from RRAP.

iii) Summary

The change in Gross Debt Service ratio as a result of RRAP was found to be marginal, 1 percentage point, and decreased as pre-RRAP GDS ratios increased. The presence of a repayable RRAP loan, in general, did not cause affordability problems. The mean increase in rent for tenants was \$75, as measured several months after the rehabilitation had taken place. The amount of the increase was not related to tenant income.

About three quarters of RRAP clients stated that the RRAP assistance was an important factor in their decision to undertake the rehabilitation work. Less than half of the recipients, however, believed that government assistance would be an important factor in undertaking future work. These findings were similar for homeowners and landlords and historical and current RRAP clients.

3. Summary - Assistance to Residents

This section examined the success of the program in providing assistance to residents of substandard housing on the basis of need.

First, RRAP homeowner recipients were found to have significantly lower incomes than the general population of Canadians living in dwellings in need of major repair. When other factors are controlled, the difference in income is \$5 000. While Rural RRAP recipients had incomes which were generally lower than those of Urban recipients, the difference from the general population was greater in urban areas. Over 80 per cent of RRAP homeowner clients had incomes below the second income quintile upper cutoff (40th percentile) of the general population.

While tenants in RRAPed rental units had lower incomes on average than their general population counterparts, the difference was less than that observed for homeowners. The average income of RRAP tenants was

\$3 500 less than that of all tenants in dwellings in need of major repairs.

The average GDS ratio (shelter costs to income) of RRAP homeowner clients was found to be greater than the corresponding measure of the general population. While the ratio was around 21 per cent, the difference was greater in rural areas and in the Atlantic and Quebec regions. RRAP homeowners were twice as likely to have GDS ratios over 30 per cent, a high ratio especially for low-income households.

More than half the RRAP homeowners lived below the poverty threshold; a proportion 2.5 times greater than that found in the general population. The proportion was highest in rural areas and in the Atlantic and Quebec regions. Above the poverty line RRAP served the lowest income households. However, below the poverty line, the RRAP clients had higher incomes on average than the general population households below the poverty line.

RRAP homeowner clients were found to have significant amounts of equity in their dwellings, although substantially less than homeowners in the general population. Average equity was over \$35 000. It was less in rural areas and increased as age of household head increased. This equity could be used, in some circumstances, to supply funds for required repair work. Where incomes are sufficient, and lenders willing, a new mortgage or other loan could be obtained. Where access to financing is limited, for example, in rural areas, or where incomes are insufficient to repay additional debts, the availability of a deferred payment loan or mortgage would enable some of this equity to be used to repair the dwelling. The evaluation found that over half the RRAP homeowners had sufficient equity to finance the costs of their repairs at prevailing interest rates without exceeding a GDS ratio of 30 per cent.

The analysis revealed that the program provided assistance without imposing additional financial burden on the recipients. On average, the RRAP repayable loan resulted in an increase in GDS ratio of only one percentage point. For tenants, comparable measures of GDS ratio were not available. However, the analysis showed that rent increases of from 15 to 25 per cent occurred within the first year after RRAP.

Over half the recipients of RRAP assistance rated that assistance as very important in their decision to undertake the work. The lowest income recipients rated the assistance the most important.

B. Improvement of Substandard Housing

The second objective of RRAP is to improve substandard housing to an acceptable level of health and safety. The analysis of this objective will consider the concepts of standardness, completeness and health and safety.

1. Standardness

The program guidelines specify that all mandatory elements in the dwelling must be brought up to an acceptable quality level. This minimum level is defined in the RRAP Standards. The achievement of this objective can be determined by testing the following hypothesis:

After the RRAP work, all elements of the dwelling unit defined as mandatory in the RRAP Standards present a standard condition, i.e. no substandard mandatory elements exist.

The physical inspections of RRAPed dwellings provide information on the condition of various elements of the dwelling. A systematic inspection procedure and recording form was used. While a seven point condition rating scale was employed, the scale specified a point at which the element becomes substandard, thus enabling a set of dichotomous standard/substandard ratings to be created¹. A composite measure of all of the individual elements identified as mandatory in the RRAP Standards was created from the items rated in the physical inspections². All mandatory items are included in the measure. It must be remembered that the measure is a strict and literal interpretation of the RRAP Standards which measures standardness according to the program parameters and may or may not be a valid indicator of overall dwelling quality.

¹ Appendix 1 describes the physical inspection instrument and database in greater detail.

² The Technical Appendix describes the creation of the standardness measure.

The inspectors were required to estimate the cost to bring any substandard elements up to standard. Using the cost estimates for individual elements, a total cost to standardize estimate was calculated for each dwelling containing substandard elements.

Table 4.16 presents the incidence of substandard ratings for each mandatory item in the RRAP Standards. For homeowner units, the average number of substandard items per RRAPed unit was 1.15. This means that, on average, there was still one mandatory item in the dwelling which did not meet the RRAP Standards after all RRAP work had been completed. For Rental RRAP units, the average was slightly less, at 0.83 substandard items per unit. In both cases no significant difference was found between dwellings in the current (1981) and historical (1975-78) samples.

The same table also reports that the mean cost to upgrade the substandard items to a standard condition is just under \$650 per unit for both homeowner and rental units. Again no significant difference was found between the current and historical samples.

For individual items, the incidence of substandard ratings varied from zero to over 14 per cent. The majority of items, however, fell in the 2 to 7 per cent range. Attached structures, water entry and door and window weatherstripping demonstrated the highest incidence of substandard ratings. Structural soundness of roofs and exterior walls, plumbing, electrical and heating systems were virtually all rated standard¹.

Table 4.17 shows the distribution of dwellings with at least one substandard mandatory element within different subgroups of RRAPed units. Overall, 51 per cent of homeowner units contained at least one substandard mandatory item. The incidence was significantly lower in Quebec, where less than 40 per cent of homeowner dwellings fell into this category. No significant difference was found between urban/rural location or by dwelling age category. Rental units showed slightly lower incidence overall at 42 per cent. Regional variation closely followed the homeowner distribution with Quebec showing an even lower incidence, below 20 per cent.

¹ Initial validity and reliability testing of the standard/substandard measure revealed that no one item exerted more than a 3.6% influence on the overall proportion of dwellings containing at least one substandard item. See Appendix 2.

TABLE 4.16

INCIDENCE OF SUBSTANDARD RATING - HOMEOWNER AND RENTAL(1)

	Homeowner n=1 104	Rental n=382
Mean Number of Substandard Items	1.15	0.83
Mean Cost to Repair	\$ 632	\$ 643
Inspection Item	% Substandard	
Surface drainage	2	2
Basement water proofness	5	2
Water entry	14*(2)	7
Attached structures	12**(2)	9
Exterior walls	4	2
Basement walls	2	2
Support posts and beams	2	1
Soundness of exterior walls	0	0
Soundness of chimney	4	3
Roof structure	0	0
Ground floors	1	1
All floors above ground	1	1
Basement insulation	2	3
Attic ventilation	8	5
Basement ventilation	7	10
Doors and windows	6	4
Doors weatherstripping	13	10
Windows weatherstripping	10	7
Surface of exterior walls	6	4
Roof surface	2	3
Flashing	3	2
Furnace	1	1
Heat distribution system	2	1
Pipes	2**(2)	1
Plumbing	4	1
Number of bathrooms	0	0
Bathroom equipment	2	2
Visible wiring	1	0
Electrical system	1	0

Source: RRAP Physical Inspections 1982

1. Current (1981) sample only. All incidences not significantly different from historical (1975-78) sample except as noted * significant at 0.05 level
** significant at 0.01 level
2. Incidence of substandard ratings for historical homeowner sample:
 - Water entry 19%
 - Attached Structures 20%
 - Pipes 5%

TABLE 4.17

INCIDENCE OF SUBSTANDARD RATING - FOR SUBGROUPS

Group	N	At Least One Substandard Item	%	Significance
HOMEOWNERS				
All	1 297	51		
Urban Areas	446	53		
Rural Areas	820	50		ns
Atlantic	441	54		
Quebec	398	39		***
Ontario	75	60		
Prairies	202	58		
British Columbia	181	57		
Building Age				
Less than 13 yrs.	103	51		
13 - 22 years	120	49		ns
23 - 37 years	325	48		
More than 37 yrs.	697	54		
RENTAL				
All	614	42		
Atlantic	119	58		
Quebec	261	19		
Ontario	133	64		***
Prairies	55	49		
British Columbia	46	57		

Source: RRAP Physical Inspections 1982

*** Significant at the .0001 level.

Although these findings are significant they have to be put into perspective. Those dwellings found to contain substandard mandatory items after RRAP were not necessarily in deteriorated or dangerous condition. On average, less than \$650 would be required to fully correct the substandard items. These findings do, however, clearly show that for roughly half the units, the program did not result in all mandatory items being repaired to meet the requirements of the RRAP Standards.

2. Completeness

The RRAP guidelines require that all mandatory elements in a dwelling be repaired¹. The presence of substandard items in a dwelling which has been RRAPed indicates that the dwelling has not been brought up to the acceptable standard specified in the RRAP Standards. Items which are substandard and which were not worked on with RRAP are an indication that the RRAP work is incomplete, that is, items which should have been worked on were not. The following hypothesis can be tested.

No RRAP loan is delivered for partial rehabilitation work which has failed to bring all mandatory items up to a standard.

The RRAP Physical Inspections will again provide the identification of substandard items. Items which were rated substandard and were not worked on through RRAP are considered to be incomplete. These are, therefore, a subset of all substandard items in the previous section. Only the current (1981) sample dwellings were used for this analysis to eliminate the possibility of post-RRAP deterioration causing substandard ratings. As the inspections were carried out no more than one year after the current sample was RRAPed, this problem should not be encountered.

Table 4.18 presents the incidence of incomplete repairs. The overall mean number of incomplete items was 1.01 for homeowner units and 0.66 for rental units. Although certain individual items presented a significantly higher incidence of incompleteness, their removal from the measure did not substantially affect the overall incidence.

Table 4.19 reveals that close to half (46 per cent) of homeowner units contained at least one incomplete item after RRAP. Only 36 per cent of rental units were in the same state. The incidences are significantly lower in Quebec at 38 per cent for homeowner units and 19 per cent for rental units.

¹ If the RRAP assistance is not sufficient to do all of the required work and the owner is unable or unwilling to provide the additional funds, then the program guidelines require the dwelling to be excluded. Dwellings are also excluded if they cannot reasonably be rehabilitated or are beyond repair.

TABLE 4.18

INCIDENCE OF INCOMPLETE RATING - HOMEOWNER AND RENTAL¹

	Homeowner n=1 076	Rental n=367
Mean Number of Substandard Items	1.01	0.66
Inspection Item	8	8
Surface drainage	2	2
Basement water proofness	5	2
Water entry	13	7
Attached structures	14	14
Exterior walls	4	2
Basement walls	2	1
Support posts and beams	2	1
Soundness of exterior walls	0	0
Soundness of chimney	4	3
Roof structure	0	0
Ground floors	0	1
All floors above ground	1	1
Basement insulation	2	4
Attic ventilation	9	6
Basement ventilation	7	10
Doors and windows	7	6
Doors weatherstripping	12	10
Windows weatherstripping	10	7
Surface of exterior walls	8	7
Roof surface	3	4
Flashing	3	2
Furnace	1	1
Heat distribution system	2	1
Pipes	2	1
Plumbing	4	2
Number of bathrooms	0	0
Bathroom equipment	3	3
Visible wiring	1	0
Electrical system	1	0

Source: RRAP Physical Inspections 1982

1. Current (1981) sample only.

TABLE 4.19

INCIDENCE OF INCOMPLETE RATING - FOR SUBGROUPS(1)

Group	N	At Least One Incomplete Item %	Significance
HOMEOWNERS			
All	1 076	46	-
Urban Areas	349	49	
Rural Areas	728	45	ns
Atlantic	371	47	
Quebec	359	38	***
Ontario	55	53	
Prairies	162	55	
British Columbia	130	54	
Building Age			
Less than 13 yrs.	95	46	
13 - 22 years	102	44	ns
23 - 37 years	288	42	
More than 37 yrs.	544	50	
RENTAL			
All	368	36	-
Atlantic	87	52	
Quebec	183	19	
Ontario	49	57	***
Prairies	32	46	
British Columbia	16	53	

Source: RRAP Physical Inspections 1982

1. Current (1981) cases.

*** Significant at the .0001 level.

The results on incompleteness are virtually identical to the findings of the previous section on substandardness with respect to the incidence, average number of items and distribution by subgroups. This implies that most of the substandardness found in RRAPed dwellings is due to incompleteness of repairs rather than poor quality workmanship or inappropriate materials. This finding is pursued in more detail in the following section.

In order to determine if the amount of assistance provided through the program is sufficient, it is necessary to determine whether the completeness of repairs is related to the amount or type of assistance. In order to determine if a relationship exists, the following hypothesis can be tested:

Cases of partial RRAP work, i.e. incomplete mandatory items present after RRAP, are closely linked to the client's ability to pay.

The measure of partial RRAP is the presence of at least one incomplete item as defined in the previous section. The client's ability to pay will be operationalized through the use of Gross Debt Service (GDS) ratio, the amount of forgiveness earned under RRAP and the gross household income. If partial RRAP is caused by insufficient RRAP assistance, then households where partial RRAP has occurred should have used all of the assistance available to them and be unable to assume any additional repayable loan.

The relationship between incompleteness and ability to pay is not applicable for Rental RRAP because landlords are permitted to recover the rehabilitation costs through rent increases immediately after RRAP.

Table 4.20 presents the proportion of clients with and without repayable loans for dwellings with and without incomplete items. There are slightly more clients with repayable loans in the incomplete category; 30 per cent compared to 20 per cent. This difference is essentially a rural phenomenon since no statistically significant difference was found for urban cases.

Table 4.21 provides some characteristics of households in these subgroups. For all cases, as well as for the rural and urban subgroups, there is no significant difference in income and GDS ratio for the partial and complete RRAP cases. In rural areas, contrary to the hypothesis, partial RRAP cases show larger loan amounts, less forgiveness and larger repayable loans. However, in all cases, the maximum assistance had not been reached and GDS ratios indicated that additional repayable amounts could have been assumed.

TABLE 4.20
PARTIAL RRAP AND REPAYMENT - HOMEOWNERS

Group	PARTIAL REPAY AND REPAYMENT HOMEOWNERS		Signif
	No Incomplete Item	At Least One Incomplete Item	
ALL CASES			
Repaying	21%	29%	
Not Repaying	79%	71%	***
N	578	498	
RURAL CASES			
Repaying	18%	29%	
Not Repaying	82%	71%	***
N	402	326	
URBAN CASES			
Repaying	28%	30%	
Not Repaying	72%	70%	ns
N	176	172	

Source: RRAP Physical Inspections 1982, RRAP Administrative Data, RRAP Homeowner Survey 1982

TABLE 4.21
PARTIAL RRAP AND ABILITY TO PAY - HOMEOWNERS

Group	No Incomplete		At Least One		Signif
	Mean	N	Mean	N	
ALL CASES					
Income	\$14 747	446	\$15 286	434	ns
GDS Ratio	21%	312	21%	293	ns
Repayable Amount	\$ 900	536	\$ 1 430	513	**
Forgivable Amount	\$ 2 566	536	\$ 2 374	513	**
Total Loan Amount	\$ 3 467	536	\$ 3 804	513	**
RURAL CASES					
Income	\$14 797	290	\$14 236	277	ns
GDS Ratio	20%	203	21%	194	ns
Repayable Amount	\$ 559	342	\$ 1 309	333	**
Forgivable Amount	\$ 2 672	342	\$ 2 490	333	*
Total Loan Amount	\$ 3 231	342	\$ 3 800	333	**
URBAN CASES					
Income	\$16 192	155	\$17 172	156	ns
GDS Ratio	22%	108	20%	98	ns
Repayable Amount	\$ 1 680	194	\$ 1 659	180	ns
Forgivable Amount	\$ 2 326	194	\$ 2 154	180	ns
Total Loan Amount	\$ 4 006	194	\$ 3 813	180	ns

Source: RRAP Physical Inspections 1982, RRAP Administrative Data, RRAP Homeowner Survey 1982

*significant at the 0.05 level

**significant at the 0.01 level

***significant at the 0.001 level

3. Health and Safety

The second objective of RRAP is to ensure that an "agreed level of health and safety" is attained. This concept can be operationalized in two ways. First, the RRAP Standards, as a whole, can be taken as the criterion of acceptable health and safety. Thus, a measure of health and safety would be equivalent to the measure of dwelling condition used in the previous sections. Using this approach, if the standards are met, then the dwelling does not present health and safety hazards.

The analysis of this measure revealed that half of the RRAPed dwellings still presented at least one substandard mandatory item after RRAP. If the direct relationship between the RRAP Standards and health and safety is assumed, then half of the RRAPed dwellings present health and safety hazards.

Clearly, there are some elements within the RRAP Standards which are more closely related to health and safety than others. The impact of these elements should be recognized in the development of a health and safety measure. Conversely, there are others which have little to do with health and safety and should not be included.

For this reason, a second approach would be more appropriate. Using this approach, health and safety would be treated separately from the RRAP Standards based measures of standardness and completeness. The measures would be chosen according to informed perceptions about those elements which contribute directly to health and safety thus giving face validity to the measure. No consideration would be given to the mandatory/optional categorization of elements in the RRAP Standards.

To measure the effectiveness of RRAP in eliminating health and safety hazards the following hypothesis can be tested:

No health and safety hazards exist in dwelling units which have been RRAPed.

The RRAP Physical Inspections provide condition ratings for elements in RRAPed dwellings. Indices of health and safety hazards were derived from the inspection items in consultation with CMHC Technical Services inspectors. Table 4.22 lists the items included in the indices.

TABLE 4.22
HEALTH AND SAFETY INDICES

Item Description	Health Index	Safety Index
Condition of attached structures		x
Doors - weatherstripping (1)	x	
Windows - weatherstripping (1)	x	
Waterproofness of basement	x	
Basement ventilation (1)	x	
Fire hazards		x
Condition of furnace		x
Heat distribution system	x	
Condition of electrical system		x
Water supply piping	x	
One complete bathroom (1)	x	
Bathroom equipment	x	
Bathroom ventilation	x	
Presence of smoke detector (1)		x
Location of smoke detector (1)		x
Condition of interior stairs		x

1. Not a seven point scale.

Table 4.23 shows the incidence of substandard ratings for each item comprising the health and safety indices, for the current (1981) and historical (1975-78) samples of RRAPed dwellings. The mean number of substandard health items was about 0.5 (one half) items per dwelling (0.4 for rental). On average, about 1 (one) substandard safety item was found per dwelling.

On the health index, no significant difference was observed between the two samples. However, on the safety scale, the mean number of substandard items was significantly less in the current sample, both for homeowner and rental units. The improvement is attributable to the increased presence of smoke detectors in the current sample¹.

¹ A reliability analysis of the two indices calculated the overall incidence of dwellings failing the measures with each element systematically removed from the index. This analysis revealed that, for the health index, the door weatherstripping element increased the overall failure rate by 8.4 percentage points. On the safety scale, the smoke detector element caused a 10 percentage point increase in the overall failure rate. The full results of the reliability analysis of all indices are presented in Appendix 2.

TABLE 4.23

HEALTH AND SAFETY INDICES - INCIDENCE OF SUBSTANDARD RATINGS -

HOMEOWNER AND RENTAL

	Homeowner		Rental	
	Curr. n=1737	Hist. n=377	Curr. n=460	Hist. n=263
HEALTH INDEX				
Mean number of failures	0.52	0.55ns	0.38	0.46ns
<u>Item Description</u>	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>
Doors-weatherstripping	16	18	10	13
Windows-weatherstripping	11	8	7	10
Basement waterproofness	6	3*	3	2
Basement ventilation	7	10*	10	13
Condition of furnace	1	0	1	0
Heat distribution system	2	2	1	0
Water supply piping	2	6**	1	1
One complete bathroom	0	0	0	0
Bathroom equipment	3	1	2	2
Bathroom ventilation	5	5	4	5
SAFETY INDEX				
Mean number of failures	1.06	1.18*	0.77	1.00**
<u>Item Description</u>	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>
Condition attached structures	14	20**	8	10
Fire hazards	5	3*	5	3
Condition of furnace	1	0	1	0
Condition electrical system	1	1	0	2*
Presence of smoke detector	44	51*	31	51**
Location of smoke detector	33	31	24	32*
Condition of interior stairs	7	11**	8	3**

Source: RRAP Physical Inspections 1982

* significant at the 0.05 level

**significant at the 0.01 level

Table 4.24 shows the incidence of dwellings with at least one substandard health or safety item (i.e. failing the health or safety measure) for different subgroups of the current (1981) sample of RRAPed dwellings. No significant difference was observed between current and historical RRAP dwellings. One third of all dwellings failed the health measure, while sixty per cent failed the safety measure.

Health failures were found less frequently in Quebec (21%) but affect one dwelling in two in British Columbia. Safety failures are found more often in Ontario and British Columbia than in the other regions. Comparatively, rural areas fared worse on safety, urban areas worse on health. Safety failures became less frequent as age of the household head increased. On the rental side, Quebec fared much better than the other regions on the health index, while there was no regional difference on the safety index.

Having documented the failure of dwellings on measures of health and safety, it is important to explore the reasons behind these failures. More precisely, do the failures result from deficiencies in RRAP work or do they reflect an absence of RRAP work on these elements. The following hypothesis can be tested:

Substandard health and safety items present after RRAP are due to the absence of RRAP work on the item rather than to deficiencies in work which was undertaken.

As shown in Table 4.25, for homeowner units, less than 25 per cent of the substandard health and safety items were elements which had been worked on under RRAP. The incidences are slightly higher for rental units, however still less than 40 per cent in all cases. No indication of whether or not work was done was available for smoke detectors which did exhibit the highest incidence of substandard ratings.

TABLE 4.24

INCIDENCE OF AT LEAST ONE FAILURE - HEALTH AND SAFETY INDICES -
HOMEOWNER AND RENTAL

Group	Health Index			Safety Index		
	%	N	Signif	%	N	Signif
HOMEOWNER						
All	34	1 747	-	58	1 747	-
Urban Areas	41	573		53	573	
Rural Areas	31	1 174	***	60	1 174	**
Atlantic	35	583		55	583	
Quebec	21	559		59	559	
Ontario	45	103	***	65	103	***
Prairies	42	262		50	262	
British Columbia	51	241		67	241	
Building Age:						
Less than 13 yrs.	25	97		63	97	
13 to 22 years	32	105		59	105	
23 to 37 years	32	289	ns	55	289	ns
More than 37 yrs.	34	556		53	556	
Household Head Age:						
Less than 40 yrs.	32	240		66	240	
40 to 65 years	31	354	ns	52	354	***
More than 65 yrs.	29	303		48	303	
RENTAL						
All	27	460	-	44	460	-
Atlantic	39	120		42	102	
Quebec	13	229		40	229	
Ontario	46	64	***	57	64	ns
Prairies	34	46		48	46	
British Columbia	42	20		47	20	

Source: RRAP Physical Inspections 1982

**significant at the 0.01 level

***significant at the 0.001 level

TABLE 4.25

RRAPED STATUS OF SUBSTANDARD HEALTH AND SAFETY ITEMS -
HOMEOWNER AND RENTAL

Item Description	Homeowner		Rental	
	% Subst.	% of Substandard RRAPed	% Subst.	% of Substandard RRAPed
HEALTH INDEX				
Doorways	16	24	10	35
Windows	11	25	7	38
Basement waterproofing	6	0	3	27
Basement ventilation	7	4	10	1
Condition of furnace	1	0	1	0
Heat distribution	2	2	1	0
Water supply piping	2	14	1	30
Number of bathrooms	0	-	0	-
Bathroom equipment	3	16	2	34
Bathroom ventilation	5	-	4	-
SAFETY INDEX				
Attached structures	14	22	8	35
Fire hazards	5	-	5	-
Condition of furnace	1	0	1	0
Electrical system	1	14	0	37
Smoke detector presence	44	-	31	-
Smoke detector location	33	-	24	-
Condition of stairs	7	9	8	32

Source: RRAP Physical Inspections 1982

A final indicator of the effect of RRAP on health and safety relies on the views of those directly affected by the program. RRAP recipients are in a position to assess if the program has eliminated or reduced the health and safety hazards which were present in their dwelling before the rehabilitation work was done. To determine whether RRAP has had a significant positive impact on health and safety, even though individual elements may still present substandard condition, the following hypothesis can be tested:

RRAP clients are of the opinion that RRAP has improved the health and safety of their dwellings.

The RRAP Client Surveys asked homeowner and landlord recipients whether the program had a negative or positive effect on the health and safety of their dwelling. Table 4.26 presents the distribution of responses for the current (1981) and historical (1975-78) samples and for subgroups of the current sample. Some of the seven response categories have been grouped for presentation purposes.¹

There are no significant differences between the historical and current sample distributions. More than half the clients rated the effect of RRAP on health and safety as very positive, while only ten per cent gave it a negative or no effect rating. For homeowners, high ratings were most prevalent in Quebec and lower in Ontario and the Prairies. Although statistically not significant, the regional distribution of landlord responses showed a similar pattern of positive ratings in Quebec and lower ratings in the Prairies and British Columbia.

The overall conclusion must be that, for health and safety items, the majority of cases of substandard ratings were items which had not been worked on under RRAP. The quality of the work which was done with RRAP, while not a major determinant of health and safety hazards, is reported in the next section of the report, the evaluation of the achievement of the third program objective.

1 RRAP Homeowner and Landlord Question:

Do you feel that the rehabilitation work which has been done to your dwelling has had a negative or positive effect on the health and safety of your home?

1	2	3	4	5	6	7
-----			-----			
Negative			Positive			

TABLE 4.26

RRAP EFFECT ON HEALTH AND SAFETY - RECIPIENTS OPINIONS -
HOMEOWNERS AND LANDLORDS

Group	Negative or No Effect (1-4) %	Somewhat Positive (5-6) %	Very Positive (7) %	N	Signif
HOMEOWNERS					
All Historical	11	33	56	205	ns
All Current	9	31	59	932	
Atlantic	10	28	62	299	***
Quebec	7	28	65	319	
Ontario	16	46	37	52	
Prairies	11	43	45	134	
British Columbia	9	32	59	129	
LANDLORDS					
All Historical	9	42	49	107	ns
All Current	7	27	66	179	
Atlantic	8	20	71	45	ns
Quebec	6	26	69	81	
Ontario	3	26	72	26	
Prairies	13	39	48	19	
British Columbia	16	58	26	8	

Source: RRAP Homeowner Survey 1982

RRAP Landlord Survey 1982

***significant at the 0.001 level

4. Summary - Improvement of Substandard Housing

This section examined the success of the program in improving substandard housing to an acceptable level of health and safety.

First, it was found that half of the Homeowner RRAP dwellings still presented substandard elements after rehabilitation which were considered to be mandatory in the RRAP Standards. More than 40 per cent of the Rental RRAP units were in the same state. The average cost to bring these elements to a standard condition was estimated to be about \$650 per unit.

Second, the predominant reason for the presence of substandard elements in dwellings after RRAP was found to be the absence of RRAP work to the element rather than to poor quality work done through RRAP. Incompleteness was found to be more prevalent in homeowner units than rental units. However, no relationship was found between incompleteness and the client's ability to pay for the repairs.

Third, using specific indices of health and safety, it was estimated that, for Homeowner RRAP units, one third contained substandard health items and 60 per cent contained substandard safety items. Rental RRAP units exhibited slightly lower incidences of substandard items. These ratings were again found to be attributable to the absence of RRAP work rather than to poor quality work done through RRAP. The majority of RRAP Homeowner and Landlord recipients expressed the view that the program had had a very positive effect on the health and safety of their dwelling.

Fourth, for each of these measures, standardness, completeness and health and safety, a relatively close coherence was found in the regional distribution. Quebec represented the best achievement of the objective and Ontario represented the poorest achievement.

In summary, RRAP has not been totally successful in improving substandard dwellings. Substandard mandatory, health and safety elements are still present in dwellings after RRAP. The majority of these substandard elements can be attributed to the absence of RRAP work rather than to poor quality work. However, the outstanding work in all categories was found to be minor in nature and not to create major health and safety hazards.

C. Quality and Useful Life

The third objective of RRAP is to ensure that the quality of repair and improvement substantially extends the useful life of each housing unit. Three criteria will be used to measure the achievement of this objective; quality of the RRAP work, client satisfaction with the RRAP work and extension of useful life.

1. Quality of the RRAP Work

The first criterion used to determine if RRAP extends the useful life of the dwelling is whether the repairs were done with high quality workmanship and appropriate materials. If the workmanship and materials were poor, the extension of the useful life of the dwelling will certainly not be supported. This does not mean, however, that useful life will be extended if the workmanship and materials were good. Quality of workmanship and appropriateness of materials are necessary, but not sufficient, conditions to a RRAP induced extension of useful life. Therefore, if RRAP is at least supportive of the useful life objective, the following hypothesis can be tested:

Repairs done through RRAP present acceptable levels of quality of workmanship and appropriateness of materials.

As part of the RRAP Physical Inspections, the inspectors were asked to rate the quality of workmanship and the appropriateness of materials used for the work undertaken with RRAP. Quality of workmanship was rated on a seven point scale, from top workmanship to terrible workmanship, with a rating of three or less indicating substandard workmanship. Appropriateness of materials was rated on a three point scale; totally appropriate, adequate, totally inappropriate, with totally inappropriate equated with substandard materials.

Table 4.27 shows the incidence of substandard workmanship or materials for each dwelling element which was RRAPed. The number of cases (N) corresponds to the number of dwellings in which that element was RRAPed. Only one element showed a statistically significant difference between the historical and current samples: the incidence of substandard roof structure workmanship in homeowner units decreased from 13 per cent to 1 per cent.

Apart from elements with a low number of cases, the incidence of substandard ratings is less than 10 per cent for workmanship and less than 5 per cent for materials. Even though small, these results indicate that problems with the quality of repairs are more likely due to poor quality workmanship than to inappropriate materials.

TABLE 4.27
INCIDENCE OF SUBSTANDARD MATERIALS AND WORKMANSHIP - HOMEOWNER AND RENTAL

Item	HOMEOWNER		RENTAL	
	Materials %	Workmanship %	Materials %	Workmanship %
Attached Structures	1	7	1	3
Surface drainage	0	3	0	7
Lot upkeep	0	0	0	0
Structure - exterior walls	0	1	0	4
Surface - exterior walls	1	2	1	2
Soundness - exterior walls	2	1	0	0
Soundness - chimney	0	0	0	0
Exterior doors and windows	0	2	1	1
Exterior doorways	1	4	1	1
Windows	1	2	1	3
Surface - roof	0	2	0	2
Structure - roof	0	1	0	0
Flashing	2	4	0	0
Attic ventilation	1	3	2	3
Basement floor	4	5	15	16
Basement walls	0	3	3	4
Support posts and beams	1	2	0	0
Basement waterproofness	0	3	0	0
Basement ventilation	7	5	5	0
Basement insulation	1	2	2	3
Furnace	0	2	0	0
Heat distribution system	1	1	0	1
Electrical panel	0	+	0	+
Wiring type	1	1	0	1
Visible wiring	0	1	0	0
Electrical system	0	1	0	0
Pipes	1	2	0	0
Plumbing	1	4	0	1
Bathroom equipment	1	3	0	0
Kitchen facilities	1	2	0	1
Floors above basement	0	2	0	0
Ground floor	0	2	0	0
Floors above ground	0	2	0	4
Interior stairs	1	0	0	0
Interior walls and ceilings	2	5	11	14
Water entry	7	4	1	1
		13	0	0

Source: RRAP Physical Inspections 1982

+ Not available

Table 4.28 presents the incidence of dwellings with at least one RRAPed element substandard on workmanship or materials for the current and historical samples. Approximately 15 per cent of all RRAPed homeowner units fell into this category. The incidence was significantly lower in Quebec, where only 6 per cent of current and 2 per cent of historical cases were found to present such a condition. West of Ontario, the incidence was higher, approaching one third of homeowner units. For rental units, the same pattern was observed but the incidences were higher. The problem is significantly more common in urban areas than in rural areas. No significant difference was found for other explanatory variables.

TABLE 4.28
DWELLINGS WITH SUBSTANDARD MATERIALS OR WORKMANSHIP -
HOMEOWNER AND RENTAL

Group	Historical			Current		
	%	N	Signif	%	N	Signif
HOMEOWNERS						
All	14	366	-	16	1 687	-
Urban Areas	24	150		23	548	
Rural Areas	9	153	***	13	1 139	***
Atlantic	13	143		16	579	
Quebec	2	67		6	543	
Ontario	19	42	***	11	97	***
Prairies	14	53		31	251	
British Columbia	28	61		29	217	
RENTAL						
All	11	202	-	18	371	-
Atlantic	2	32		13	87	
Quebec	4	68		13	185	
Ontario	9	63	***	15	49	***
Prairies	45	18		57	34	
British Columbia	26	20		26	16	

Source: RRAP Physical Inspections 1982

***significant at the 0.001 level

The relationship between the quality of the RRAP work and sweat equity, that is, work carried out by the property owner himself, was examined. One could expect that work which is done by the owner himself may be of lower quality than that which is done by a contractor. The following hypothesis can be tested:

The use of sweat equity (work done by the property owner) results in a higher incidence of poor quality work than does work undertaken by a contractor.

Table 4.29 shows the impact of the use of sweat equity on the incidence of dwellings with substandard work quality. The use of sweat equity produced no significant effect in all subgroups.

TABLE 4.29

RELATIONSHIP BETWEEN WORK QUALITY PROBLEMS AND SWEAT EQUITY -
HOMEOWNER AND RENTAL

Group	Historical Incidence(1)		Current Incidence(1)	
	%	N	%	N
HOMEOWNER				
All	11	190	15	1 048
Used Sweat Equity	12	92	16	501
Did Not Use Sweat Equity	11	28 ns	13	241 ns
RENTAL				
All	11	62	19	160
Used Sweat Equity	5	40	21	110
Did Not Use Sweat Equitiy	18	22 ns	14	50 ns

Source: RRAP Physical Inspections 1982
RRAP Homeowner and Landlord Surveys 1982

1. Incidence of dwellings with at least one substandard work quality rating.

2. Client Satisfaction

The RRAP Client Surveys asked recipients to rate their satisfaction with three aspects of the RRAP work: the quality of the workmanship, the quality of materials used and the economic value of the work. As shown in Table 4.30, there was little difference in ratings between current and historical and homeowner and landlord groups. Satisfaction with all aspects of the RRAP work, workmanship, materials and value, was high.

TABLE 4.30

CLIENT SATISFACTION WITH RRAP WORK -
HOMEOWNERS AND LANDLORDS

	Historical % Satisfied(1)		Current % Satisfied(1)	
	Homeowners	Landlords	Homeowners	Landlords
Workmanship	76	78	86	83
Materials	87	82	91	91
Value	81	80	86	79
N	123	70	769	149

Source: RRAP Homeowner and Landlord Surveys 1982

1. Satisfied is a rating of 5 or above on a seven point scale where 1 = extremely dissatisfied and 7 = extremely satisfied.

3. Extension of Useful Life

Without absolute measures of the degree to which the useful life of RRAPed dwellings has been extended over a 15-year period, it is not possible to directly measure this indicator. However, the impact of the program on the useful life of the dwellings can be inferred by isolating key components of the dwelling structure which could cause a threat to a fifteen year useful life if they were substandard. Using this approach, the following hypothesis can be tested:

RRAPed units do not contain substandard elements related to useful life.

The Physical Inspection condition ratings will be used for this analysis. A list of dwelling elements, with potential impacts on useful life of the dwelling and which were rated by the RRAP Physical Inspections was established in consultation with CMHC Technical Services inspectors and other building specialists.

Table 4.31 shows the incidence of substandard useful life items for homeowner and rental units in the historical and current samples. Water entry and attached structures (porches, garages) are the major threats to useful life followed by attic and basement ventilation and surface of exterior walls.

TABLE 4.31

USEFUL LIFE INDEX - INCIDENCE OF SUBSTANDARD RATINGS -
HOMEOWNER AND RENTAL

Item	HOMEOWNER		RENTAL	
	Hist. n=377	Curr. n=1 747	Hist. n=231	Curr. n=382
Attached structures	20	14**	10	9
Exterior foundation walls	6	4	4	2
Surface of exterior walls	8	7	5	4
Soundness of exterior walls	0	1	1	0
Roof surface	3	2	1	3
Roof structure	0	0	1	0
Flashing	2	3	2	2
Attic ventilation	11	9	5	5
Basement walls	2	3	1	2
Support posts and beams	1	2*	2	1
Basement waterproofness	3	6*	2	2
Basement ventilation	10	7*	13	10
Furnace	0	1	0	1
Electrical system	1	1	2	0
Pipes	6	2**	1	1
Ground floor	0	1	0	1
Floors above ground	0	1	0	1
Water entry	19	15	11	7

Source: RRAP Physical Inspections 1982

Note: Difference between historical and current samples not significant except where noted:

* significant at the 0.05 level

** significant at the 0.01 level

The incidence of dwellings with at least one substandard useful life item is shown in Table 4.32 for homeowner and rental units and subgroups. Overall, four in ten RRAP dwellings fell into this category. This does not mean that 40 per cent of RRAPed units will not have a fifteen year useful life. It does, however, give an indication that some problems related to dwelling conditions may develop during that period. Quebec, once again, presents fewer problems than other regions. No significant difference was found between urban and rural areas or by dwelling age categories.

TABLE 4.32

DWELLINGS WITH SUBSTANDARD USEFUL LIFE ITEMS -
HOMEOWNER AND RENTAL

Group	Historical			Current		
	%	N	Signif.	%	N	Signif.
HOMEOWNERS						
All	47	377	-	42	1 747	-
Urban Areas	47	157		41	573	
Rural Areas	50	155	ns	43	1 174	ns
Atlantic	57	145		45	583	
Quebec	26	67		37	559	
Ontario	45	42	***	50	103	**
Prairies	55	53		46	262	
British Columbia	42	70		42	241	
Building Age:						
Less than 13 yrs.	42	6		43	97	
13 - 22 years	33	15		39	105	
23 - 37 years	55	29	ns	37	289	ns
More than 37 yrs.	47	139		42	556	
RENTAL						
All	31	231	-	52	382	-
Atlantic	44	32		43	87	
Quebec	7	74		18	187	
Ontario	46	78	***	52	55	***
Prairies	55	18		35	37	
Bitish Columbia	25	29		39	17	

Source: RRAP Physical Inspections 1982

**significant at the 0.01 level

***significant at the 0.001 level

To assess the reasons for the number of dwelling units with substandard useful life items, the same approach followed for health and safety items will be employed. The following hypothesis will be tested:

Substandard useful life items present after RRAP are due to the absence of RRAP work on the item rather than to deficiencies in work which was done.

As shown in Table 4.33, for homeowner units, less than one fifth of those useful life items which were rated substandard had been worked on through RRAP. For rental units, the proportion RRAPed was slightly larger, but still less than one third.

TABLE 4.33

RRAPED STATUS OF SUBSTANDARD USEFUL LIFE ITEMS -
HOMEOWNER AND RENTAL(1)

Item	HOMEOWNER n=1 747		RENTAL n=1 747	
	% Subst.	% of Subst. RRAPed	% Subst.	% of Subst. RRAPed
Attached structures	14	22	9	34
Exterior foundation walls	4	9	2	23
Surface of exterior walls	7	19	4	35
Soundness of exterior walls	1	0	0	-
Roof surface	2	11	3	5
Roof structure	0	-	0	-
Flashing	3	6	2	0
Attic ventilation	9	19	5	34
Basement walls	3	11	2	27
Support posts and beams	2	9	1	18
Basement waterproofness	6	0	2	20
Basement ventilation	7	4	10	2
Furnace	1	0	1	0
Electrical system	1	14	0	-
Pipes	2	14	1	35
Ground floor	1	15	1	0
Floors above ground	1	0	1	0
Water entry	15	2	7	0

Source: RRAP Physical Inspections 1982

1. Current sample only.

While the incidence of RRAPed items is small, it is larger than that found for substandard health and safety items. The small sample sizes prevent any firm conclusions on whether the poor RRAP results are due to low quality workmanship or inappropriate materials. Nevertheless, the analysis confirms that the majority of deficiencies related to useful life are due to the absence of RRAP work rather than to poor quality of work done through RRAP.

As indicated earlier, the extension of useful life of RRAPed dwellings could be directly measured at a time 15 years following the delivery of the program. While this time period has not yet elapsed, there is an opportunity to obtain some perspective on the performance of the program over time. The condition of the historical sample of dwellings, which were RRAPed between 1975 and 1978, can be compared to the condition of the current sample dwellings which were RRAPed in 1981. Since the inspections were carried out in 1982, they provide a measure of condition of the historical sample, 4 to 7 years after the delivery of the program.

If the quality of the historical sample does not differ significantly from that of the current sample, then the extension of useful life, if not demonstrated, is strongly suggested. The following hypothesis can be tested:

Housing units RRAPed several years ago contain no more substandard elements relating to useful life than do more recently RRAPed units.

Table 4.34 reports the results of an analysis of variance carried out using the number of substandard useful life items as the dependent variable and the application year as the explanatory variable. The significance of the model is low, meaning that only small variations in number of substandard items occur from year to year. The analysis shows that, for homeowner units, 1975 and 1977 cases are not significantly different from the 1981 cases. The 1976 and 1978 cases are only marginally different. For rental units, no significant differences were found between years. This lack of difference indicates that, over seven years, RRAP dwellings did not substantially deteriorate in condition of items related to useful life.

TABLE 4.34
NUMBER OF SUBSTANDARD USEFUL LIFE ITEMS -
HOMEOWNER AND RENTAL

Year	Homeowner (n=2 112)		Rental (n=616)	
	N	Prob	N	Prob
1981 (reference year)	0.78	-	0.51	-
1975	0.97	ns	0.90	ns
1976	1.10	*	0.53	ns
1977	0.78	ns	0.63	ns
1978	0.97	*	0.54	ns

Source: RRAP Physical Inspections 1982

Note: Results of an analysis of variance using number of substandard useful life items as dependent variable and application year as explanatory variable.

* t significant at the 0.05 level

A final, more stringent test can be used to assess the extent to which RRAPed units have a substantially increased useful life. It is known, or can be taken as given, that units eligible for RRAP constitute a subset of the population of dwelling units characterized by a comparatively poor condition and short useful life. Before RRAP, these eligible dwellings were part of the worst stock of housing. If, after RRAP, the units present a useful life longer than that of the general stock, it could be concluded that RRAP had a very significant effect on their condition.

The optimal measure of the general stock of housing would be a set of inspections, similar to the RRAP Physical Inspections, carried out on a representative sample of dwellings. This study has not yet been carried out¹. However, the same inspection schedule

¹ A National Housing Quality Survey is being carried out by CMHC in 1985 as part of the Rehabilitation and Conservation Overview Evaluation.

has been applied to the housing stock in Ottawa as part of a different study of housing condition¹. Even though it is not representative of the overall Canadian housing stock, it can be used here as an acceptable source of data on the general population of dwellings. The Ottawa Pilot Study provides ratings of individual dwelling components.

The Useful Life Index can therefore be applied to both groups of dwellings and the following hypothesis can be tested:

RRAPed dwellings rate higher on a measure of useful life than does the general stock of existing housing.

Rejection of the hypothesis will not prove that RRAPed dwellings have a shorter useful life than the general stock. However, proving the hypothesis will show that RRAP has had some impact on useful life.

The results of an analysis of covariance carried out using the Useful Life Index as the dependent variable and the source of data (RRAP or general stock) as explanatory variable are shown in Table 4.35. Building age, dwelling surface area and market value were included in the model to control for the dissimilarities in the stock represented in the two samples.

¹ Ekos Research Associates, Pilot Study of Physical House Condition and Rehabilitation Need, Ottawa, April 1981. In 1979, CMHC and the United States Department of Housing and Urban Development agreed to undertake parallel research projects in order to generate improved methodologies for assessing physical house condition, rehabilitation need and rehabilitation costs. The Ottawa Pilot Study was the Canadian part of that research. The study involved a physical inspection of each dwelling by an inspector and by an interviewer as well as a personal interview of the occupant. Completely drawn in the Ottawa inner city, a replacement sample of 500 cases was used. The data were collected during the fall of 1980.

TABLE 4.35
NUMBER OF SUBSTANDARD USEFUL LIFE ITEMS(1) -
RRAP AND GENERAL STOCK -
HOMEOWNER AND RENTAL

Group	Homeowner n=1 025		Rental n=524	
	N	Prob	N	Prob
RRAP (reference category)	1.07	-	0.54	-
General Stock (Ottawa Pilot)	1.91	**	2.59	**

Source: RRAP Physical Inspections 1982
Ottawa Pilot Study 1981

** Significant at the 0.01 level.

- 1 Results of an analysis of variance using number of substandard useful life items as dependent variable and source of data (RRAP or Ottawa Pilot) as explanatory variable.

The analysis showed that RRAPed dwellings presented fewer deficiencies related to useful life than did their counterparts in the Ottawa stock. The different controls built into the analysis of covariance eliminated differences by building age, dwelling surface area or market value as alternative explanations. It thus demonstrated that RRAPed units are likely to present a better life expectancy on this measure than the general housing stock.

This result should be viewed as a rough indicator only, because of the acknowledged weaknesses of the Useful Life Index and because of the limited representativeness of the Ottawa housing stock.

4. Summary - Quality and Useful Life

This section measured the extent to which RRAP ensures that the quality of repair and improvement substantially extends the useful life of each housing unit.

On the whole, the vast majority of repairs done under RRAP met acceptable quality standards of workmanship and materials. Indications of some work problems were found in both the current and historical samples.

These problems were essentially related to poor quality workmanship rather than to the use of inappropriate materials. No relationship was found between work quality problems and the use of sweat equity by the property owner. Three-quarters, or more, of all client groups indicated that they were satisfied with the workmanship, materials and value of the work done under RRAP.

Second, a significant proportion of RRAPed units contained substandard items related to the continued useful life of the dwelling. These were found to be primarily due to the absence of RRAP work. No difference was observed between rural and urban dwellings. As with the other dwelling condition measures, units in Quebec, both homeowner and rental, fared better than those in other regions. Proof of time revealed that, as measured by the Useful Life Index, the condition of dwellings RRAPed up to seven years previously was not significantly different from that of dwellings RRAPed in the preceeding year.

D. Maintenance Practices

The fourth objective of RRAP is to promote an acceptable level of maintenance of the existing housing stock. The evaluation of this objective will consider the maintenance practices of RRAP recipients and the program requirement for maintenance and occupancy by-laws.

1. Occupant Practices

The inspector ratings of the quality of the maintenance of the dwelling were used to test the following hypothesis:

The general maintenance practices of the occupants of RRAPed dwellings are acceptable.

The RRAP Physical Inspections contain a rating of the overall quality of maintenance of the dwelling.¹ For the analysis, the maintenance will be considered acceptable if a rating above the midpoint of the scale was received.

Generally speaking, the inspectors found RRAPed dwellings to be well maintained. Table 4.36 presents the distribution of the maintenance ratings. Overall, 15 per cent of the inspected dwellings received below average ratings while 27 per cent received excellent ratings. The distributions are similar between urban and rural areas but do vary across regions. Quebec presents the highest ratings, Ontario and British Columbia the lowest. The regional distribution suggests that local conditions may have significant impacts on the extent to which the dwellings are maintained after RRAP.

Given that RRAP recipients generally follow adequate maintenance practices, it is necessary to determine if this pattern is retained over time. For RRAP to have a long term impact, the quality of maintenance practices must not deteriorate as time passes after the dwelling was RRAPed. The following hypothesis can be tested:

Maintenance practices of residents of dwellings RRAPed several years ago are as good as those of residents of recently RRAPed dwellings.

Table 4.37 shows the incidence of maintenance quality ratings for the historical (1975-78) and current (1981) samples. No significant differences exist between the two groups for both homeowner and rental units. The absence of significant differences indicates that the acceptable maintenance practices are retained on a longer term basis after the RRAP work.

¹ Physical Inspection Maintenance Rating:
On the basis of evidence drawn from your inspection of the property, how would you rate the general quality of maintenance practices?

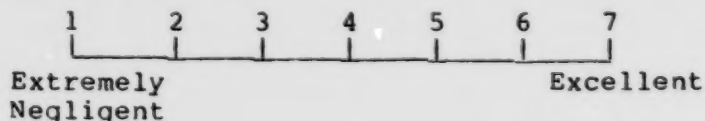


TABLE 4.36

QUALITY OF MAINTENANCE PRACTICES -
HOMEOWNER AND RENTAL(1)

Groups	Maintenance Practices(2)				
	Negligent to Average	Good	Very Good	Excellent	
	%	%	%	%	
HOMEOWNER					
All	15	22	36	27	1 738
Urban Areas	15	28	34	23	571
Rural Areas	15	19	37	28	1 167
Atlantic	15	19	38	28	578
Quebec	8	14	42	36	556
Ontario	28	37	31	5	102
Prairies	20	26	29	26	262
British Columbia	22	39	27	12	240
RENTAL					
All	12	21	43	24	374
Atlantic	18	30	37	15	84
Quebec	2	7	54	38	185
Ontario	22	46	29	4	52
Prairies	30	33	25	13	37
British Columbia	22	27	38	13	17

Source: RRAP Physical Inspection 1982

1 Current sample dwellings only.

2 Seven point scale reduced to four by aggregating the first four categories.

TABLE 4.37

QUALITY OF MAINTENANCE PRACTICES - CURRENT AND HISTORICAL -
HOMEOWNER AND RENTAL

Groups	Maintenance Practices				N
	Negligent to Average(1) %	Good %	Very Good %	Excellent %	
HOMEOWNER					
Current	15	22	36	27	1 737
Historical	17	26	36	21	375
RENTAL					
Current	12	21	43	24	374
Historical	18	27	28	27	230

Source: RRAP Physical Inspections 1982

¹ Rating of negligent was reported for less than 5 per cent of any group.

2. Maintenance and Occupancy By-Laws

The second aspect of the objective to promote an acceptable level of maintenance of the existing housing stock involves the maintenance activity of the municipality. For the program, this objective is operationalized through the requirement that all municipalities have maintenance and occupancy (M&O) standards in effect before RRAP can be introduced.

The RRAP requirement for M&O standards will have contributed to the improvement of the maintenance of the existing stock if the introduction of the program has caused municipalities to enact and effectively administer a by-law or standards program. The following two hypotheses can be tested:

- a) The number of municipalities with M&O by-laws has increased since the introduction of RRAP in 1974; and
- b) M&O administration is more active in RRAP areas and municipalities where RRAP is active.

The first hypothesis deals with the extent to which M&O by-laws have been put into effect since the program began. Evidence of the existence and administration of by-laws is available from several sources. Two studies, undertaken by the Residential and Community Improvement Division of CMHC (responsible for Urban RRAP), examined M&O by-law activity.¹ A survey of 21 municipalities was conducted as part of the evaluation.

At the time of the enactment of RRAP in 1973, the National Housing Act was amended to include a requirement for municipal property maintenance and occupancy standards (M&O standards) as a condition of participation in the program. This was done first to help accomplish the degree of rehabilitation in a given neighborhood necessary to reverse a decline in the area; and second, to help ensure that the gains secured in neighborhoods through a concerted rehabilitation effort were maintained in the years following implementation.

¹ A Profile of Successful Maintenance and Occupancy Experience in Canada (Hale, 1982) describes the by-law administration process in a selection of municipalities. These municipalities demonstrate that successful administration of an M&O program can be accomplished using a variety of enforcement approaches and in a variety of municipal situations. These include large and small cities, rural municipalities, by-laws under provincial enabling legislation or city charter.

A follow-up study, to be completed in 1985, examines provincial enabling legislation across Canada. This study finds that enabling legislation is in place in all provinces except British Columbia. However, several different approaches are used. New Brunswick, Newfoundland and Ontario provide model by-laws for adoption by municipalities. In P.E.I. and Manitoba, provincial enabling legislation is used in smaller municipalities while the larger centers enact their own by-laws. Ontario has a large number of provincial acts covering specific building types and uses. Quebec has had provincial legislation requiring municipalities to enact "codes du logement" in areas where the provincial rehabilitation program is offered. Alberta empowers municipalities to enact their own by-laws.

Although most provinces had some legislation to permit municipalities to enact by-laws for the above purposes, less than a dozen municipalities across Canada had done so before the introduction of RRAP in 1974. These included Toronto (1936), Ottawa (1952), Winnipeg (1955), Windsor (1958), Montreal (1965), Sydney (1966) and Kingston (1973).

Although there was a requirement for M&O standards as a condition of RRAP funding, it is clear that the requirements of the legislation could be met without necessarily having a by-law as long as the Corporation had evidence that the accommodation after RRAP would conform to occupancy and building maintenance standards which were satisfactory to the Corporation.

This interpretation allowed RRAP to be used in provinces where provincial enabling legislation did not exist (for example, Quebec and Saskatchewan) to allow municipal by-laws relating to maintenance and occupancy (for example, under city charter or resolution of council), or in areas too small to have developed M&O by-laws as such.

Prior to the introduction of RRAP in 1973, only a handful of municipalities had M&O by-laws in force. The evidence suggests that by 1984, at least 400 urban municipalities have some form of M&O by-law in place. Table 4.38 shows that although 50 per cent of urban municipalities have a by-law, coverage by province varies greatly.

Of 19 urban municipalities which were surveyed as part of the RRAP evaluation, 18 reported that M&O by-laws or equivalents were in place. Six of these had been introduced at the same time that RRAP was initiated. A further five of the municipalities had revised some form of existing by-law or standard as a result of the introduction of RRAP. Changes included more follow-up inspections on RRAPed properties, more systematic application, generally or in RRAP designated areas and time extensions to permit the use of RRAP for compliance.

The introduction of the majority of M&O by-laws has occurred during the period since the development of RRAP. While there is no definite one-to-one relationship, the legislative requirement under RRAP for M&O Standards logically would stimulate their introduction. However, there is more to a successful M&O by-law program than simply introducing a by-law.

While there is no question that the number of municipalities with M&O by-laws has increased since the introduction of RRAP, there is no evidence to suggest that all or even most of these municipalities enforce the by-laws. Some evidence exists which suggests that in the majority of cases, enforcement practices are poor or non-existent¹. However, there are examples of municipalities which actively administer an effective M&O by-law program.

TABLE 4.38

M&O BY-LAWS AND RRAP ACTIVITY (URBAN)
MUNICIPALITIES BY PROVINCE

	Number of Municipalities (a)	Number of Municipalities in (a) with M&O By-Laws (b)	Number of Municipalities in (a) with RRAP ⁵ (c)
Canada	900	407	316
P.E.I. ²	6	3	3
Nfld. ²	34	15	12
N.S.	28	36	27
N.B.	58	57	18
Quebec ²	310	50	86
Ontario	345	214	84
Manitoba ²	27	5	5
Sask. ³	27		14
Alberta	71	23	17
B.C. & Yukon	84	44	50

1 Census subdivisions, 1981 Census, with population 2 500+. Excluding certain categories, e.g., Indian reserves, subdivisions of unorganized areas, rural municipalities, improvement districts.

2 Complete information is lacking concerning Newfoundland, PEI, Manitoba, and Quebec.

3 The provincial enabling legislation in Saskatchewan came into force in August 1984.

4 In B.C., only Vancouver can legally enforce M&O by-laws.

5 There are a few additional municipalities included in urban RRAP, although the population is below 2 500. Inclusion of these brings the total with RRAP activity to 375. (RCID).

1 Hale, 1982, RRAP Evaluation Survey of Municipalities, RRAP Evaluation Open-ended Questionnaires

An examination of by-law enforcement was undertaken as part of the 1979 evaluation of the Neighbourhood Improvement Program conducted by CMHC's Neighbourhood and Community Improvement Division. Case studies revealed that in only 7 of 19 municipalities did a moderate level of enforcement take place. Of these, the majority of activity was directly associated with RRAP inspections.

The survey of municipalities conducted as part of the RRAP evaluation found that, while all but one had M&O by-laws in place, in terms of administration, a pattern similar to that observed in the 1979 study emerged. Ten of the municipalities conduct regular inspections in RRAP areas. Of these, only 7 regularly inspect dwellings in non-designated areas. There is little difference in procedures reported between RRAP and non-RRAP areas.

Generally, one of two actions initiates a by-law enforcement activity; a specific complaint or an application for RRAP funding. All municipalities reported complaints (tenant, neighbour, elected official) as a major initiator of compliance actions. However, RRAP was cited as an equally important factor. Indeed, RRAP is used for both the inspection and compliance activities. Only a small percentage of cases, if any, require legal action.

Lawson suggests four elements of a successful maintenance and occupancy by-law program.¹ These are, encouraging owners to maintain their property, providing advice and guidance to owners willing to do work themselves, making available assistance to owners, both financial and technical, and finally, enforcement through legal means if other efforts to get the work done are not successful.

In the Profile of Successful Maintenance and Occupancy Experience in Canada, Hale confirms that a combination of the four elements, with an emphasis on the non-legal actions, contributes to a successful program. The RRAP evaluation survey of municipalities found only two that relied heavily on legal recourse (St. John's and

¹ Lawson, Matthew, The Maintenance of Property - a Program for Ontario, prepared for the Ontario Department of Municipal Affairs, 1970.

London). As shown in Table 4.39 all others reported less than 10 per cent of notifications resulted in court action. Several municipalities reported that recourse to the courts had been virtually eliminated.

Hale also found that a relationship existed between municipalities with successful M&O experience and RRAP (particularly rental RRAP) take-up.¹ He explains this relationship as the difference between simply telling the property owner what is wrong and showing him how to correct the deficiencies and helping him to undertake the work.

TABLE 4.39

M&O BY-LAW COMPLIANCE ACTIONS

Municipality	Verbal Notice %	Written Notice %	Legal Action %	Remarks
St. John's	5	95	80	
Charlottetown	55	15	5	25% Notice on Inspections All Used
Sydney		100	2	
Halifax		30 RRAP/ 75 Non-RRAP		
Fredericton	20 RRAP/ 25 Non-RRAP			
Montreal		100	10	
Ottawa	5	5	0	90% informal written notice
Thunder Bay	50	50	2 RRAP/ 0 Non-RRAP	
London		50	60 RRAP/ 40 Non-RRAP	
Windsor		100	10 RRAP/ 26 Non-RRAP	
Winnipeg	0	100	6 RRAP/ 3 Non-RRAP	
Calgary	50	50		
Edmonton		100	0	
Chilliwack	90	10	0	
Vancouver		90	10	

Source: Survey of M&O Practices, PED, CMHC, 1984.

¹ Hale, Robert L., Jr., A Profile of Successful Maintenance and Occupancy Experience in Canada, CMHC, July 1982, p.11.

For the municipalities surveyed, however, private rehabilitation is reported to be much more important than RRAP in achieving compliance. Because RRAP is available, it can be influential even if it is not actually used. The fact that funds can be made available allows the inspectors to discuss required work with the property owner. The owner may use RRAP, other programs or private resources to undertake the work. The effect of RRAP on private renovations is difficult to quantify.

Administration of a Maintenance and Occupancy program does not automatically follow from the adoption of an M&O by-law or the participation of the municipality in RRAP. Based on a variety of sources, the key factors related to the success of an M&O program appear to be strong political support, interdepartmental cooperation and an emphasis on out-of-court compliance techniques. The availability of financial assistance to property owners, for example through RRAP, does not appear to be a major factor as the majority of compliance activity occurs through private rehabilitation.

Assistance programs do appear to be significant contributors of information, both through their inspection and advice functions. However, the link between RRAP, and successful M&O program operation has not been clearly demonstrated.

3. Summary - Maintenance Practices

The maintenance practices of occupants of RRAPed dwellings were rated highly by the inspectors. The overall incidence of poor quality maintenance practices was less than 15 per cent. No direct link was found between the implementation of Maintenance and Occupancy Standards by municipalities and the requirement for M&O Standards as a condition of participation in the program.

V. PROGRAM DESIGN AND DELIVERY

Introduction

In this chapter of the evaluation, the impact of design and delivery features of the program will be examined. In Chapter III, the logical links between the program objectives and certain design features of the program were identified. The achievement of the program objectives was assessed in Chapter IV. The relationship between these two aspects will be examined in this chapter with respect to the specific mechanisms in place in the program design.

The chapter will include the examination of design features specific to Homeowner RRAP, the RRAP Standards and RRAP for the Disabled. Program delivery features examined will include the budget allocation process, delivery by agents, and delivery to remote areas.

The approach will be similar to the research method used in the assessment of objectives achievement. For each design or delivery feature, the purpose and operational characteristics will be detailed. Hypothesized relationships between the achievement of the objectives and the program design features will be tested. The analysis will utilize measures and statistical tests where required and report the findings at the scale and level of detail appropriate to the issue being examined.

A. Program Design - Homeowner

In this section the impact of design criteria specific to Homeowner RRAP is examined. These include the income limits, definition of income and the form and amount of the assistance.

The analysis of objectives achievement has shown that on various measures of need (income, GDS ratio, poverty) the characteristics of RRAP Homeowner clients were more severe than those of the general population living in dwellings in need of major repair. These effects were more apparent for households with poorer earning potential (ie. retired, single, younger households) and upon those shouldering a more onerous burden with limited income (older buildings, large families, owners with mortgages). Some regional variation has occurred as well with RRAP clients having greater affordability problems than the general population in Ontario, the Atlantic and Prairie regions.

Although these indicators demonstrate that, on average, RRAP clients are in appropriate target groups, several other factors show that much better targetting could be achieved. First, more than half of RRAP clients could have financed their own repairs within a GDS ratio of 30 per cent by

taking out a loan or mortgage (if they had access to a lender). Only half of the clients found the RRAP assistance to be very important in their decision to undertake the repairs; 20 per cent clearly stated that they would have done most of the work anyway without RRAP. Second, almost 90 per cent of the clients had more than half the value of their dwelling in equity which could have been used to finance repairs (if a financing instrument existed).

1. Income Limits

The income limits prescribed by the program determine the type and amount of assistance which is available to the recipient. They are the targetting mechanism which operates on the level of the individual household. Adjusting the income limits is one way in which the targetting of the program may have been affected over time. This role can be examined by testing the following two hypotheses:

- a) The income limits direct assistance equitably among homeowners.
- b) The targetting of RRAP has not been affected by changes in the income limits over time.

The income limits establish two cutoff points governing the type and amount of assistance available. The lower limit marks the point where the maximum amount of available forgiveness begins to decrease. The upper limit marks the point where available forgiveness decreases to zero and only a repayable loan is available¹.

A comparison of the income controls with measures of income in the broad target population for Homeowner RRAP shows the extent to which these households are eligible for RRAP. As has been shown in Chapter IV, the actual takeup of RRAP has been by households which are worse off than the average for this group.

The general population will be represented by HIFE 82, Dwellings in Need of Major Repair. The revised income limits of November 1982 will be used. Table 5.1 shows the proportion of households with income below each of the RRAP income limits and the mean income for the

¹ Applicants above the upper limit can still benefit from no cost consultation and inspections and can obtain loans at market interest rates but with no administrative costs.

population and for subgroups. It is clear that the two income limits do not provide equal access to RRAP assistance to all subgroups of the population on the basis of income.

TABLE 5.1

DWELLINGS(1) BELOW RRAP INCOME LIMITS

Group	Mean Income \$	N	Below \$13 000		Below \$23 000	
			%	Mean Income	%	Mean Income
All	27 778	75 273	23	7 898	44	12 766
Urban Areas	30 332	52 386	18	7 981	38	13 262
Rural Areas	21 933	22 887	34	7 800	59	12 042
Atlantic	20 295	1 290	37	8 065	67	12 516
Quebec	26 562	508	28	8 181	53	13 220
Ontario	30 779	716	19	8 227	38	13 117
Prairies	26 873	1 076	31	7 362	53	12 134
British Columbia	30 607	313	22	6 682	40	11 965

Source: HIFE 82

1. Dwellings in need of major repair only.

Nationally, almost one half of dwellings in need of major repair are owned and occupied by households with income less than \$23 000. These households would be eligible for RRAP assistance¹. Just less than one quarter of the dwellings in need of major repair are owned by households with income less than \$13 000. These households would be eligible for full forgiveness under RRAP.

Regional differences are dramatic. In fact, the proportion of homeowners in B.C. or Ontario with income less than \$23 000 is the same as the proportion in the Atlantic Region below \$13 000. In the Atlantic, all would be eligible for full forgiveness. In B.C., while all would be eligible for RRAP, only half could receive full forgiveness.

¹ Other RRAP eligibility criteria, location, dwelling condition, apply which would reduce the number of eligible dwellings.

The RRAP income limits have been adjusted three times since the inception of the program. Initially, full forgiveness was available for incomes up to \$6 000. In May 1976, an Interest Reduction Grant became available for the repayable loan portion for incomes up to \$11 000. Homeowners above this upper limit were not eligible to participate in the program. In June, 1980, the limit for full forgiveness was raised to \$9 000. The Interest Reduction Grant was eliminated and a formula of decreasing forgiveness was put in place.

According to the formula, available forgiveness decreased from the maximum, at the lower income limit, to zero at the upper limit which was set at \$16 500. Households above the upper limit became eligible for RRAP but only for a repayable loan. In November, 1984, both income limits were raised to reflect rises in nominal incomes due to inflation. The limit for full forgiveness was set at \$13 000 and for partial forgiveness the upper limit was set at \$23 000. Repayable loans were still available above the upper limit.

Each set of income limits can be compared to a measure of the general population at that time. The HIFE surveys provide a convenient source of data as they correspond to the years in which the limits were revised. While comparable sample selection and administration procedures were followed for each survey, only the 1982 survey contained the question on need for repair which allows the population to be subdivided by repair need. Nevertheless, the HIFE surveys provide an acceptable measure for the purposes of the analysis.

Table 5.2 shows the proportion of households eligible for full or partial forgiveness under each set of income limits.

TABLE 5.2
PROPORTION OF POPULATION ELIGIBLE FOR RRAP ASSISTANCE -
HOMEOWNERS

Group	All Households		Below Lower Limit		Below Upper Limit	
	Mean Income	N	%	Mean Income	%	Mean Income
HIFE 76	16 926	438 716	15	3 567	31	6 105
HIFE 80	24 830	513 475	14	5 578	31	9 466
HIFE 82	31 204	533 699	16	8 175	36	13 584
HIFE 82(1)	27 778	75 273	23	7 898	44	12 766
HIFE 83	34 181	542 876	14	8 309	32	13 773

Source: HIFE76, HIFE80, HIFE82, HIFE83

1. Dwellings in need of major repair only.

The distribution of clients according to the income limits provides an indication of the targetting of the program. The program is designed to provide different amounts and types of assistance to recipients in different income groups, as defined by the income limits.

Table 5.3 presents the distribution of RRAP homeowner recipients by income class. Over one-half of all recipients had incomes below the lower limit, although this figure has increased as the income limits have been adjusted upwards. The proportions of recipients over the upper limit has decreased during the same period.

TABLE 5.3

DISTRIBUTION OF RRAP HOMEOWNER RECIPIENTS BY INCOME CLASS(1)

Income Class	1976- June 1980			June 1980- Nov. 1982			Nov. 1982- 1984			Total		
	%	N		%	N		%	N		%	N	
All Classes	38	64	998	37	63	923	25	44	066	100	172	987
Below Lower Limit	53	34	436	59	37	756	67	29	358	59	101	550
Between Upper & Lower Limits	39	25	426	36	22	952	31	13	697	36	62	075
Above Upper Limit	8	5	136	5	3	215	2	1	011	5	9	362

Source: RRAP Administrative Data 1976-1984

1. Income limits and income at time of participation in RRAP

After the income limits were raised in 1980, 60 per cent of the clients were in the lowest income class. Five per cent of recipients had incomes above the upper limit, and received repayable loans only. After the further increase to the limits in 1982, the distribution shifted further towards the lowest income class. Only 2 per cent of recipients were over the income limit.

What was happening can be clearly seen if the recipient distribution is examined by year during the 1980 to 1984 period. As shown in Table 5.4, as time elapsed after the increase in income limits, the applicants lost ground nominally due to inflation. It became increasingly more difficult to keep the cost of the work either below the forgiveness amount or to where a

repayable loan was still affordable. In order to fully spend the budget, higher income homeowners were encouraged to apply to replace those who could no longer afford to participate.

By 1982, immediately before the income limits and maximum forgiveness were increased, over one third of all recipients were in the partial forgiveness group and over 5 per cent of all recipients were above the upper limit in the 'no forgiveness' group. The distribution of recipients changed immediately after the limits were increased, shifting back towards the lowest income, full forgiveness group.

TABLE 5.4

DISTRIBUTION OF RRAP HOMEOWNER RECIPIENTS BY INCOME CLASS
1980-1984

Income Class	1980 %	1981 %	1982 %	1983 %	1984 ¹ %
Below Lower Limit	63	61	52	67	64
Between Upper and Lower Limited	32	35	41	31	34
Above Upper Limit	5	4	6	2	2
Total N	23 416	24 379	26 488	33 283	8 814

Source: RRAP Administrative File

1. 1984 to June only.

It is interesting to note that since the limits were increased in 1982, the distribution of recipients is again shifting away from the lowest income group.

2. Definition of Income

The preceeding analysis utilized a measure of the gross household income while the program, as designed, utilizes an adjusted family income amount. This adjusted family income, when compared against the income limits, determines the type and amount of available assistance.

The calculation of adjusted family income specifies allowable deductions from the aggregate gross income of

the principal wage earner and the spouse. These deductions include living out or travel allowances of the family head, capital gains, family allowances, the first \$1 000 earned by a working spouse, the first \$1 000 of income above social assistance earned by a one parent family, and \$300 for each dependent child.

The current method of calculation of income from self-employment follows the same procedure used by Revenue Canada. The gross annual income for self-employed individuals is the net income (gross revenue minus expenses) plus capital cost allowances. Capital cost allowances apply to assets such as vehicles, buildings and equipment. Delivery agents are to use income tax returns, audited financial statements or statutory declarations to verify income. The calculation of adjusted family income is the same for all sources of income.

Delivery agents and CMHC branch officers have expressed concern with this measure since in some cases it qualifies self-employed households with substantial net worth who can disguise their income through "allowable deductions".

The RRAP Client Survey contains information on client employment status and occupation. Table 5.5 shows that 10 per cent of homeowner recipients reported income from self-employment. These recipients were concentrated in farming, fishing and forestry and professional occupational groups. As would be expected from this concentration, two-thirds of the self-employed recipients were located in rural areas.

TABLE 5.5
SELF-EMPLOYED RECIPIENTS - OCCUPATION - HOMEOWNERS

	<u>Self-Employed</u>			<u>All RRAP Clients</u>	
	<u>Inc.</u>	<u>%</u>	<u>N</u>	<u>%</u>	<u>N</u>
Farming/Fishing/Forestry	18.4	45.0	54	23.3	293
Semi-skilled	4.5	10.8	13	23.0	288
Skilled Trades	7.6	11.0	13	13.7	172
Sales/Service	7.0	7.1	9	10.3	129
Professional	15.1	13.2	16	8.5	106
Jr. Managerial	10.3	2.5	3	2.3	29
Sr. Managerial	20.8	3.8	5	1.9	24
Homemaker	3.8	6.6	8	16.9	212
<u>Total</u>	<u>9.7</u>	<u>100.0</u>	<u>121</u>	<u>100.0</u>	<u>1 253</u>

Source: RRAP Client Survey - Current Sample

Several characteristics of recipients are compared by employment type in Table 5.6. When compared with employees, self-employed recipients, on average, show lower adjusted family income which results in greater available forgiveness. They also did less work, on average, thus using RRAP forgiveness for a greater proportion of the work. On other income measures the self-employed recipients were worse off than employees but better off than other recipients.

The position of self-employed recipients, between employees and non-employee by income measures, is not surprising given the concentration of self-employed in rural areas and farming, fishing and forestry. However, both for professionals and for large-scale farming and fishing operations, the potential exists for forgiveness to be directed to recipients who are not in need of assistance due to an artificially-low declared income. Without instituting detailed income calculation and verification procedures, this potential problem is likely to remain unresolved.

TABLE 5.6
SELECTED CHARACTERISTICS OF RRAP RECIPIENTS BY
EMPLOYMENT TYPE - HOMEOWNERS

	Employees		Self-Employed		Other(1)	
	Mean	N	Mean	N	Mean	N
	\$		\$		\$	
Adjusted Family Income	17 504	237	13 159	111	9 496	869
Total Cost	5 992	240	5 497	115	3 874	867
Total Loan	4 957	240	4 440	115	3 387	876
Total Forgiveness	1 435	240	2 187	115	2 593	876
<u>Income Class</u>	<u>Inc.</u>	<u>N</u>	<u>Inc.</u>	<u>N</u>	<u>Inc.</u>	<u>N</u>
Below Lower Limit	11	26	34	35	54	487
Between Upper and Lower Limit	52	120	49	51	40	361
Above Upper Limit	37	87	16	17	6	56
<u>GDS Ratio</u>						
30% or less	82	112	68	40	80	428
More than 30%	18	25	32	19	20	108
<u>Rural Indicator</u>						
Rural	57	133	73	73	74	633
Non-Rural	43	101	27	28	26	268

Source: RRAP Client Survey - Current Sample
RRAP Administrative Data

1. Other employment types include retired, student, unemployed.

3. Form and Amount of Assistance

RRAP assistance is available in the form of forgivable and repayable loans and a combination of the two. The assistance type is determined by adjusted family income which determines the maximum available forgiveness, and the total cost of the work, which determines whether a repayable loan is required. In the case of repayable loans, even though no interest rate subsidy is involved, the recipient still benefits from free consultation, inspection and loan administration through RRAP.

It has been shown (Chapter IV.B.2) that there is no strong relationship between the presence of incomplete mandatory items after RRAP and the recipients ability to pay. There is some evidence, however, to suggest that, in rural areas, incompleteness is positively related to economic status as incompleteness is more prevalent among clients with greater repayable loans and less forgiveness.

Since the program design permits three forms of assistance, the following hypothesis can be tested:

The form and amount of assistance do not affect the achievement of program objectives.

Type of assistance was determined for each case from the program administrative records. The measures of dwelling condition and client satisfaction, which were developed for the analysis of objectives achievement, were used. The results of the analysis are shown in Table 5.7. For most of the measures, no statistically significant difference was observed between the assistance type groups although small differences were observed.

Cases where forgiveness only was received were significantly better in terms of standardness and completeness. The quality of the workmanship and materials was also better for this group. Overall client satisfaction with RRAP was lowest where only a repayable loan was taken. This could be expected as only non-monetary assistance has been received. For the other two assistance types where at least some forgiveness was received, no difference in overall satisfaction existed.

TABLE 5.7

INCIDENCE OF STANDARD CONDITION AND SATISFACTION RATINGS -
BY TYPE OF ASSISTANCE

	Forgiveness Only %	Forgivable/ Repayable %	Repayable Only %	Signif. (3)
COMPLETENESS VARIABLES	(N=812)	(N=144)	(N=121)	
No Substandard Items	52.2	41.7	41.0	**
No Incomplete Items	56.8	47.4	45.4	**
No Substandard Items On:				
Health Index	69.0	65.5	63.2	ns
Safety Index	43.9	42.6	44.9	ns
Useful Life Index	61.4	55.6	54.4	ns
QUALITY VARIABLES				
Workmanship/Materials	87.2	81.8	71.4	***
Maintenance	96.3	94.4	98.4	ns
Overall Dwelling Condition	97.3	97.6	96.0	ns
SATISFACTION VARIABLES				
Helpfulness of Agent	82.6	85.8	78.1	ns
Helpfulness of Inspector	77.0	75.1	68.0	ns
Speed in Processing	83.3	79.2	75.8	ns
Overall Satisfaction with RRAP	85.1	85.3	71.8	***

Source: RRAP Physical Inspections, 1982
RRAP Client Surveys 1982

1. Homeowner clients from the current (1981) sample only.
2. Descriptions of the measures are found in Appendix 2.
3. Chi-square: *** significant at the 0.001 level
** significant at the 0.01 level

B. Program Design - RRAP Standards

The RRAP Standards are the operationalization of the housing quality objectives of the program as they define the "minimum acceptable quality" which is to be achieved. Practically the standards are used to qualify dwellings for eligibility in the program and to identify mandatory and eligible (non-mandatory) work activities which can be funded.

Dwellings qualify for RRAP by being substandard in at least one of six basic items: structural soundness, fire safety, electrical services, plumbing, heating system and accessibility for a disabled occupant. As part of the initial inspection of the dwelling, the inspector will verify that the dwelling unit meets this criterion. The specific mandatory items and performance criteria in the Standards are used to assess the condition of each component. However, there is no clear link between the six basic items and the components in the Standards. This may result in confusion on eligibility for some dwellings.

The Standards distinguish between mandatory work, which is linked to concerns of health, safety and useful life, and eligible work (non-mandatory) which may contribute to overall dwelling quality and thermal efficiency. The mandatory requirements represent the minimum quality standard which must be attained on health and safety items. The Standards differentiate between these two types of items, with respect to their eligibility for funding.

The Standards qualify only substandard elements for eligibility for assistance but recognize that in some instances repairs may not be warranted where the remaining life of the component is limited. However, this does not imply that all elements with a remaining life of less than 15 years should be replaced. Similarly, replacement of a complete element or system may be warranted where it is more cost-effective than just repairing the substandard components of the system.

The form of the Standards differs for different dwelling components and includes eligibility criteria, performance standards, materials requirements, instructions, guidelines, information and so on. Many of the performance criteria defer to other codes and by-laws having jurisdiction. The absence of a firm guideline within the Standards may result in inconsistent delivery, particularly in smaller communities and rural areas where exposure to and experience with these codes may be limited. It is recognized that flexibility and interpretation is often required when

adapting existing standards to the rehabilitation context. This can lead to further confusion and inconsistency of interpretation of the intent of the standards.

The examination of the achievement of the quality-related objectives of the program identifies several conclusions which impact on the use of the standards. The RRAPed dwellings exhibited a high incidence of substandard elements after RRAP; 50 per cent had at least one substandard element, 30 per cent exhibited at least one substandard health related item, 60 per cent had at least one substandard safety related item, and 40 per cent had at least one substandard item related to useful life. However, overall dwelling quality was rated highly, and the cost to bring all outstanding substandard items up to standard was \$600 per dwelling on average.

The analysis revealed that most of the substandard items after RRAP were attributable to incompleteness rather than to substandard work performed with RRAP. The incidence of substandard workmanship and inappropriate materials for items which were RRAPed was very low. RRAP clients believe that the program has substantially improved the condition of their dwellings and that publicly rehabilitated dwellings are in better condition than similar dwellings which were not assisted.

In light of these findings, the impact of the design of the RRAP Standards on the achievement of the housing quality objectives should be investigated. If the Standards are contributing to the high incidence of substandard items and incomplete work, then several hypotheses can be tested to assess their impact:

- a) Optional, non-essential work is included at the expense of mandatory repairs.
- b) Repair or partial replacement is undertaken where total replacement or removal of the substandard item is warranted.
- c) The specification of performance criteria in the Standards leads to confusion and deficiencies in the quality or completeness of repairs.

1. Mandatory/Optional Work

The flexibility inherent in the interpretation of the standards may lead to the inclusion of work which does not directly support the achievement of the housing quality objectives at the expense of other work which

does. While no direct comparison of work items can be made, several findings support this hypothesis.

The major factor contributing to the presence of substandard items was incompleteness, that is, mandatory work which was not RRAPed. RRAPed items represented a relatively small portion of substandard items. The mean cost to bring substandard elements up to standard was \$600 per dwelling.

Estimates of the amount of optional (non-mandatory) work done by RRAP vary, but a figure derived from delivery agents is around 20 per cent. Applying this proportion to the average RRAP loan amount for dwellings with at least one incomplete element (\$3 804) produces a figure of \$720 allocated to non-mandatory elements.

The similarity of these amounts supports the hypothesis, that optimal work is carried out at the expense of completing mandatory repairs. However, incompleteness is more common where a repayable amount is involved. Where clients are contributing, in the form of a repayable loan, they may feel entitled to more control over the work items which are done and push for the inclusion of desired non-mandatory items at the expense of mandatory work.

2. Repair/Replace Decision

The repair/replace decision is recognized in the Standards as requiring judgement on the part of the inspector. The relative costs and benefits of repair vs. replacement may not be readily apparent. Some components are more capable of being repaired whereas others can never be completely repaired. Within the limits of the program, some elements cannot be satisfactorily repaired, nor deserve to be, such as non-essential outbuildings or structures, as they do not directly impact on the safety or useful life of the dwelling proper.

In many instances the repair/replace decision has major cost implications. The repair option, patching, sealing or changing one component of a larger system, may involve an expenditure of several hundred dollars. The replace option, on the other hand, may require several thousand dollars. It is easy to identify many elements where this could occur; roof, windows, plumbing, wall and floor surfaces.

Where the estimated cost of the specified work exceeds the program limits, or the financial resources of the applicant, the program manuals suggest that costs be reduced where possible. This can involve the elimination of non-mandatory items, the substitution of acceptable materials and the repair of components where total system replacement is not required. Very little guidance is provided to the inspector in making these decisions, either in the RRAP Standards or in program operation manuals.

Table 5.8 presents the RRAP Standards items, which were rated during physical inspections, by the incidence of substandard and incomplete ratings. Each of the elements with the higher incidences could present problems to the inspectors and applicant when making a repair/replace decision, and it is easy to imagine a decision leading to future problems. Attached structures (garage, shed, fence), when they do not directly effect the safety or life expectancy of the dwelling proper, may not warrant complete repair or replacement. Water entry problems, as well as being difficult to diagnose, can be difficult to completely repair. Often the symptom is repaired but the cause remains. Attic and basement ventilation problems, may not be apparent at different times of the year, when the initial inspection is carried out. For many of these items, a range of possible remedial measures are available. For example, weatherstripping may be used as the repair option where replacement of the entire window or door could be warranted. Nevertheless, weatherstripping may often be seen as an unnecessary activity and not be carried out.

A similar examination of items with the lowest incidences of substandard and incomplete ratings reveals these to be elements where the repair/replace decision is much more straightforward. These elements (heating, plumbing, structural supports, electrical) are less difficult to assess and generally easier to repair. They are more likely to have individual components (fixtures, beams, columns) which can be replaced if the rest of the system is functional. When the entire system requires replacement (worn wiring, flocked or rusted pipes, broken members) this is generally apparent.

TABLE 5.8

RRAP STANDARDS ITEMS - BY INCIDENCE OF SUBSTANDARD
AND INCOMPLETE RATINGS

Description	Substandard %	Incomplete %
Water entry	14	13
Attached structures	12	14
Weatherstripping - doors	13	12
Weatherstripping - windows	10	10
Attic ventilation	8	9
Surface of exterior walls	6	8
Basement ventilation	7	7
Doors and windows	6	7
Basement waterproofness	5	5
Exterior walls	4	4
Soundness of chimney	4	4
Plumbing	4	4
Flashing	3	3
Roof surface	2	3
Bathroom equipment	2	3
Surface drainage	2	2
Basement walls	2	2
Support posts and beams	2	2
Basement insulation	2	2
Heat distribution system	2	2
Pipes	2	2
Floors above ground	1	1
Furnace	1	1
Visible wiring	1	1
Electrical system	1	1
Ground floors	1	0
Soundness of exterior walls	0	0
Roof structure	0	0
Number of bathrooms	0	0

Source: RRAP Physical Inspections 1982

1. Ratings for homeowner dwellings, current sample only.
Tables 4.16 and 4.18, Chapter IV.

This analysis of specific elements supports the hypothesis that the incidence of substandard and incomplete ratings is related to the potential difficulty in making a repair/replace decision. Elements which may be more difficult to assess exhibit the highest incidences of problems. This is supported by comments from delivery agents who administer the program.¹ They recognize the role of interpretation of the intent of the Standards and the importance of having highly trained and experienced inspectors.

This was also recognized by CMHC in the development of the training courses in rehabilitation skills. This series of courses covers all aspects of residential rehabilitation including initial inspections and identification of work required, writing specifications for the work, estimating costs, and hiring and supervising contractors. Developed and offered originally by the Rehabilitation Skills Training Centre (RSTC) the courses are now offered by community colleges across Canada.

3. Performance Criteria

The preface to the RRAP Standards states that the Standards were designed "as a reference to identify eligible work which may be funded under the program". Performance criteria are variations of the requirements of the Residential Standards and CMHC's Minimum Property Standards for Existing Residential Construction. Any new work is to be carried out in reasonable conformity with the Residential Standards.

The RRAP Standards themselves are a mixture of eligibility and performance criteria. For the majority of components, the Standards simply call for "adequate" "appropriate" or "suitable" action or materials. For other components, codes and standards of other jurisdictions are referenced. Examples of this are shown in Table 5.9.

¹ Open-ended questionnaires were sent to a variety of people with an interest in RRAP as part of the evaluation.

TABLE 5.9

RRAP STANDARDS COMPONENTS AND REFERENCES

Component No. and Description	Reference Cited	Default
3. Building Space and Planning		
3.5 Bathroom	Local requirements	Residential Standards
3.6 Light and Ventilation	Local requirements	Residential Standards
4. Fire Protection		
4.1 General - upgrading	Municipal/Provincial	Residential Standards
6. Insulation & Thermal Upgrading	Technical Builders/ Bulletin	
11. Building Services		
11.1 Heating		
- solid fuel burning equipment	CAS B366.1	
- chimney/smoke pipe clearances	RRAP Standards	Residential Standards
- good practice	Nat. Bldg. Code Part 6	
11.2 Plumbing		
- pressure reducing valve	Local code	
- general bathrooms	Residential Standards	
11.3 Sewage		
- sewage disposal	Local jurisdiction	
11.4 Electrical		
- minimum requirements	Local authority	
14. Accessibility for Disabled	NRCC No. 17669	NHA 5076

Source: RRAP Standards, NHA 5132

To investigate whether the specification method has any impact on component quality, incidences of substandardness and incompleteness were examined for components with different specification methods. Components for which specific codes apply (plumbing, heating, electrical) showed the lowest incidences. The highest incidences occur for components which have no applicable standards (waterproofness, insulation, doors and windows).

This is by no means conclusive evidence of a link between the specifications in the Standards and the quality of the components. Certain components (fire safety, ventilation) which have explicit standards references show high incidences of problems. Other factors, such as the nature of the component, awareness of the requirements (i.e. structural elements) and the repair/replace decision, are also involved.

4. Summary

The design of the RRAP Standards has been shown to impact on the achievement of the housing quality objectives of the program. Linkages have been shown between several design features of the standards and the incidences of substandard and incomplete ratings after RRAP.

First, the inclusion of optional non-essential repairs at the expense of mandatory items could account for some of the incompleteness. The additional cost of work remaining after RRAP is similar to the estimated cost of optional items which were funded by the program.

Second, repair or partial replacement where total replacement or removal of the substandard element should be undertaken may account for some of the substandard ratings. Elements where the repair/replace decision is difficult to make show the highest incidences of substandard ratings after RRAP.

Third, confusion or deficiencies in the specification of performance criteria on a dwelling element basis could account for some of the housing quality concerns, although the impact is not clearly shown. The specification of standards for existing buildings and renovation activities is much less straightforward than for new construction.

C. Program Design - Disabled

In this section, the special application of RRAP for the Disabled is examined. The impact on objectives achievement of specific design features of RRAP for disabled clients will be assessed.

In May 1981 the criteria for eligibility under RRAP were expanded to include improvements to make a dwelling more accessible for a disabled occupant. Prior to this time, improvements to make a dwelling more accessible were eligible activities but not qualifying items. RRAP was also made available on a universal basis outside of designated areas for this purpose only. Subsequent revisions to the program in November 1982 provided an additional loan and forgiveness amount for clients doing both accessibility and other mandatory RRAP work.

The adaptation of existing housing represents an important addition to the housing stock suitable for disabled persons. It is especially important in those situations where a recently disabled person wishes to remain in the same dwelling. Repair assistance for the disabled is particularly important in rural areas where few institutional facilities and other alternatives exist.

From an economic point of view, with or without its social cost aspect, adapting existing dwellings for disabled occupants can be demonstrated to be more cost-effective than the institutional option. The Special Parliamentary Committee on the Disabled and the Handicapped estimated (from various related studies) institutionalization costs of approximately \$30 000 per disabled person per year, while independent living costs were only \$8 000, an annual saving of \$22 000 (in 1981 dollars) per disabled person¹.

The following hypotheses can be tested to assess the impact of the disabled provisions of RRAP:

- a) Disabled households are represented among RRAP clients in proportion to their presence in the general population.
- b) The quality and completeness of repairs and satisfaction with various aspects of the program are similar for disabled and non-disabled RRAP clients.

¹ Special Parliamentary Committee on the Disabled and the Handicapped, Obstacles, Supply and Services Canada, 1981, p. 79.

Estimates of the housing needs of disabled Canadians are available from a CMHC study entitled Estimate of the Disabled Population in Core Need (Estimates and Assumptions) Planning Division, February 1984, which were derived from the Canadian Health and Disability Survey carried out by Statistics Canada.¹ The proportion of loans for the disabled is taken from the RRAP Monitoring System for 1982 and 1983. The quality, completeness and satisfaction with the program are taken from the RRAP Client Surveys and Physical Inspections and represent households with disabled persons who received RRAP before 1982. The loan, forgiveness and cost of work amounts are taken from the RRAP Administrative Data.

Table 5.10 shows the comparison of the takeup of RRAP for the disabled and the proportion of households with disabled persons in need of adequate shelter. In 1982, takeup of RRAP for the Disabled was less than the representation of the disabled in need in the population in all provinces except Alberta and British Columbia. This was the first full year of the disabled provisions in the program. By the following year, representation by the disabled was higher and more in line with housing need proportions. The Maritimes and Saskatchewan were still below the need proportion but had shown improvement.

The RRAP Client Surveys asked if the household contained a disabled person and whether modifications to the dwelling would be desirable. As these households participated in RRAP before the disabled provisions became available, the survey gives an indication of the need for dwelling modifications within the RRAP client group. As shown in Table 5.11 while over 5 per cent of the RRAP households had a disabled person, only 3 per cent still required modifications. This incidence is consistent with the measurement of housing need for the disabled used previously.

¹ Health Division, Statistics Canada, 1983.
The estimates are based on mobility impairment criteria for those between 15 and 64 years of age requiring special housing design considerations.

TABLE 5.10
RRAP FOR THE DISABLED - TAKEUP AND REPRESENTATION -
1982 - 1983

Province	Housing Needs(2) %	N	RRAP for the Disabled(1)				
			1982 % of total	Service Ratio(3) N	1983 % of total	Ser. Rat(3)	
Newfoundland	3.9	18	1.1	0.3	82	2.9	0.7
P.E.I.	3.9	5	0.7	0.2	15	1.7	0.4
Nova Scotia	3.9	43	1.3	0.3	156	4.5	1.2
New Brunswick	3.9	19	0.8	0.2	67	2.0	0.5
Quebec	3.0	36	0.4	0.1	308	3.1	1.0
Ontario	3.1	91	3.4	1.1	354	7.1	2.3
Manitoba	3.0	14	1.1	0.3	74	3.6	1.2
Saskatchewan	3.0	9	0.6	0.2	30	1.4	0.5
Alberta	3.0	118	7.0	2.3	78	3.3	1.1
British Columbia	3.0	184	4.3	1.4	195	3.7	1.2
CANADA	3.2	537	1.8	0.6	1 395	3.6	1.1

Source:

1. RRAP Monitoring System 1982-1983, Residential and Community Improvement Division, CMHC.
2. Estimates of Disabled Population in Housing Need, Planning Division, CMHC, 1984.
3. Service Ration is % OF TAKEUP/% OF NEED.

TABLE 5.11

RRAP CLIENT HOUSEHOLDS WITH DISABLED PERSON

Household Type	Incidence %	Number
No Disabled Person	94.6	1 495
With Disabled Person	5.4	86
With Disabled Person and Modifications Desirable	3.2	50

Source: RRAP Client Surveys 1982

Additional data demonstrating the improvement of RRAP targetting to the disabled is shown in Table 5.12 which shows the incidence of disabled takeup by urban/rural location and homeowner/rental status. The trend in improved targetting is repeated across both settlement size and program type. Although the highest incidences are found in the urban homeowner group, the rural, predominantly homeowner, group shows the greatest improvement in takeup.

TABLE 5.12

RRAP FOR THE DISABLED - TAKEUP(1) BY RURAL/URBAN LOCATION
AND HOMEOWNER/RENTAL STATUS

Province	Urban				Rural	
	Homeowner		Rental		1982 %	1983 %
	1982 %	1983 %	1982 %	1983 %		
Newfoundland	3.6	5.0	-	0.6	0.6	2.7
P.E.I.	1.7	2.0	-	-	0.4	1.7
Nova Scotia	2.7	7.0	0.2	0.3	0.4	3.3
New Brunswick	2.4	5.3	0.1	2.3	0.3	0.9
Quebec	1.4	1.6	0.3	1.1	0.2	3.3
Ontario	4.2	7.5	0.7	4.7	4.0	5.8
Manitoba	1.5	4.0	-	0.3	0.9	4.4
Saskatchewan	0.3	0.7	-	2.0	1.3	2.0
Alberta	3.3	4.4	26.5	0.8	0.9	2.5
British Columbia	7.4	5.0	0.2	-	2.0	3.6
CANADA	3.7	4.7	1.3	1.8	0.6	3.0

Source: RRAP Monitoring System 1982-1983, Residential and Community Improvement Division, CMHC

1. Takeup as percentage of total RRAPed units by province and program type.

Table 5.13 shows the comparison of quality and satisfaction ratings for disabled and non-disabled RRAP clients. No statistically significant differences were found on the dwelling quality, completeness, health, safety, useful life, quality of repairs and maintenance measures. The only statistically significant differences were observed for program delivery; helpfulness of inspectors and overall satisfaction with RRAP. The disabled clients were less satisfied with RRAP delivery. This data does not show, however, any improvements which may have resulted from the full implementation of the special provisions of RRAP for the Disabled in 1981, and the increased assistance levels for disabled in 1982.

TABLE 5.13

INCIDENCE OF STANDARD CONDITION AND SATISFACTION RATINGS (1)-
DISABLED AND NON-DISABLED CLIENTS

	Disabled %	Non-Disabled %	Signif(2)
COMPLETENESS VARIABLES	(n=45)	(n=970)	
No Substandard Items	54.8	51.1	ns
No Incomplete Items	61.1	54.6	ns
No Substandard Items on:			
Health Index	57.3	69.8	ns
Safety Index	46.0	45.8	ns
Useful Life Index	61.9	61.1	ns
QUALITY VARIABLES	(n=45)	(n=970)	
Workmanship	96.2	96.4	ns
Materials	87.0	91.8	ns
Maintenance	90.4	88.8	ns
Overall Dwelling Condition	85.3	90.4	ns
SATISFACTION VARIABLES	(n=51)	(n=973)	
Helpfulness of Agent	93.6	92.3	ns
Helpfulness of Inspector	79.3	88.3	***
Speed in Processing	95.3	89.0	ns
Repairs by Contractor	81.4	86.0	ns
Understanding of RRAP	76.4	80.2	ns
Overall Satisfaction with RRAP	84.3	91.6	*

Source: RRAP Physical Inspections 1982
RRAP Client Surveys 1982

1. Descriptions of the measures are found in Appendix 2.
2. Chi-square: *** significant at the 0.001 level
* significant at the 0.05 level

Summary

Provisions for RRAP for the Disabled were introduced in 1981. By 1983 the disabled were being served nationally under the program in proportion to their presence in the general population. The disabled were under-represented in Newfoundland, Prince Edward Island, New Brunswick and Saskatchewan, and over-represented in Ontario, Manitoba and British Columbia.

No significant differences were found between disabled and non-disabled cases on measures of dwelling quality and completeness. Disabled clients were found to be less satisfied with the delivery of RRAP, however the client survey data does not fully represent the implementation of the RRAP for the Disabled provisions and the increased assistance amounts for disabled access work.

D. Program Delivery - Budget Allocation

In the early years of RRAP, the annual budget was allocated on a demand basis due to the absence of a repair needs database and the inability of many delivery agents to adequately deliver the program. In addition, a federal government plan, in 1974, established a five-year target of 50 000 new and rehabilitated units for the Rural and Native Housing Program. This resulted in a distribution of program resources favouring the rural program and certain provinces (Atlantic Region, Quebec) in the urban program.

The Capital Budget Control Plan was formally introduced in 1981 with the intent to provide objective guidelines and criteria for allocating urban RRAP assistance across the provinces and to designate new municipalities and new areas within municipalities already participating in the program.

The introduction of the plan addressed two additional concerns. First, the plan would be implemented over a ten-year period to allow for a gradual adjustment in the allocations. This was deemed particularly important for smaller provinces where even a small realignment of resources could be seen as significant. Second, although focussed on an annual needs basis, the plan was also intended to manage unallocated funds throughout the year.

For urban areas, the Capital Budget Control Plan consists of two components: the Urban Priority List (UPL) and the Rehabilitation Delivery Schedule (RDS). The Urban Priority List is an "advisory list" which ranks, in a standardized manner by province, eligible urban municipalities according to their need for rehabilitation. Thus, those with the highest proportion of their housing stock in need of repair are higher on the provincial ranking.

The UPL is used to assist CMHC Regional and Branch offices in ranking municipalities according to rehabilitation need and to help in determining budget allocations and in selecting new area designations¹. The Rehabilitation Delivery Schedule, on the other hand, is a means by which a municipality may systematically articulate its proposed participation in RRAP over a multi-year period and may integrate that initiative within its broader planning processes². It helps the municipality to identify housing conditions in a rehabilitation area and the need for RRAP assistance. The RDS serves as a primary source document for program planning and financial and delivery management for both CMHC and the municipality.

In rural areas, the financial aspect of the process is not framed by a formal control plan. Up to now, the budgets have been allocated to areas on the basis of past activity. No specific long-term vehicle has been developed to control resources in rural areas. The only governing rule is to respond to claims and to redirect budgetary surpluses from urban or rural budgets to rural areas which are most in need.

The general objective of the Capital Budget Control Plan, using both the UPL and the RDS, is to ensure that limited and controlled funds for RRAP are directed to municipalities most in need of rehabilitation assistance and that the capital budget is fully committed each year³. To assess the effectiveness of the budget allocation process, the following hypotheses can be tested:

- a) The Capital Budget Control Plan ensures that available Urban RRAP resources are allocated in a manner consistent with need for repair.
- b) Current budget allocation processes ensure that Rural RRAP resources are distributed according to need for repair.

There are two key concepts which must be measured: need for repair and budget activity. Need for repair will be quantified using measures of need for major and minor repairs from the 1981 Census since it was also used for establishing need under the Capital Budget Control Plan. Unlike HIFE,

1 Urban Priority List for RRAP, Market Forecasts and Analysis Division, CMHC, December, 1981.

2 RRAP-Advice No. 83-016, 20-06-1983.

3 Ibid.

which produces only regional or provincial data, the Census need for repair data can be disaggregated to the municipal level. Although there are strong arguments favouring the reliability and validity of the HIFE need for repair question, which produced a higher absolute number of dwellings in need of major repair, the distribution of need in the Census is similar to HIFE and is quite appropriate for this analysis.

Three measures of program activity will be used: the final takeup of loans, the first budget allocation and the final budget allocation. CMHC unit takeup and budget information are taken from the RRAP Administrative Data and from budgetary commitments compiled by the Treasurer's Directorate.

The analysis compares commitment data from 1979, 1981 and 1983. The 1979 activity represents the pre-Capital Budget Control Plan. The 1983 data represents the allocations under the Capital Budget Control Plan, but, given the ten-year implementation time frame, may not show the full change to the needs-based allocation plan.

Table 5.14 shows the activity levels and repair need by province for 1979, 1981 and 1983. A RRAP Service Ratio has been calculated as the percentage of total takeup divided by the percentage of total need for each area. Thus, a ratio of less than one indicates under-representation, and greater than one, over-representation. The data show that the Atlantic provinces, Quebec and Saskatchewan have received a greater proportion of RRAP takeup than their proportion of repair need. Ontario, Manitoba, Alberta and British Columbia have been under-served relative to need. This pattern continues from 1979 to 1983, although some realignment has occurred, particularly in P.E.I., Quebec, Saskatchewan and British Columbia. The takeup of RRAP in Ontario continues to be less than one half of the province's share of total need.

The distribution of takeup and need and the RRAP service ratio is shown on an urban/rural basis in Table 5.15. The repair need was found predominantly in urban areas (69%) while the takeup of RRAP was substantially skewed in favour of rural areas. The phenomenon was previously attributed to superior takeup capabilities of the rural program in the early years of RRAP¹. The alignment has marginally improved over the period.

¹ This perception was in part due to the complexity of the urban municipal delivery process, the quasi-universal nature of rural delivery and the target of delivering 50 000 new or rehabilitated units in rural areas between 1974 and 1979.

TABLE 5.14

DISTRIBUTION OF RRAP TAKEUP AND NEED FOR REPAIR -
RRAP SERVICE RATIO(1) - 1979-1983

	Need %	1979 % Takeup	1979 Ratio	1981 % Takeup	1981 Ratio	1983 % Takeup	1983 Ratio
Newfoundland	2.4	4.1	1.74	5.4	2.28	7.9	3.35
P.E.I.	.7	6.3	8.74	3.8	5.27	2.4	3.33
Nova Scotia	5.6	10.8	1.94	11.8	2.11	9.5	1.70
New Brunswick	4.1	9.4	2.29	9.1	2.22	9.1	2.23
Quebec	22.9	39.3	1.72	36.5	1.60	27.5	1.20
Ontario	34.1	6.3	0.19	5.7	0.17	13.6	0.40
Manitoba	5.1	1.9	0.37	2.8	0.55	3.0	0.59
Saskatchewan	5.8	9.0	1.55	6.1	1.06	6.0	1.04
Alberta	8.6	5.7	0.66	4.8	0.56	6.5	0.75
B.C.	10.7	7.2	0.67	13.9	1.30	14.4	1.34
Canada	100.0	100.0		100.0		100.0	

Source: RRAP Administrative Data 1979-1983
Census 1981, Statistics Canada

1. Service ratio is % of TOTAL TAKEUP / % of TOTAL NEED.

TABLE 5.15

DISTRIBUTION OF RRAP TAKEUP AND NEED FOR REPAIR -
RRAP SERVICE RATIO(1) URBAN/RURAL, 1979-1983

	Need for Repair N		%	1979 % Takeup	Ratio	1981 % Takeup	Ratio	1983 % Takeup	Ratio
Urban	822	109	68.6	36.7	0.53	37.4	0.55	46.1	0.67
Rural	376	300	31.4	63.3	2.02	62.6	1.99	53.9	1.72

Source: RRAP Administrative Data, 1979-1983
Census 1981, Statistics Canada

1. Service ratio is % of TOTAL TAKEUP / % of TOTAL NEED.

The urban and rural service ratios are shown in Table 5.16 by province for the same period. The Atlantic provinces were over-represented in both areas with the exception of rural Nova Scotia. Quebec was under-represented in urban areas but over-represented in rural areas. Ontario was consistently and substantially under-represented. The Prairie provinces were over-represented in urban areas and under-represented in rural areas. British Columbia, while over-represented in urban areas, was close to being representative in rural areas.

TABLE 5.16

RRAP SERVICE RATIO(1) -
URBAN/RURAL, 1979-1983

Province	URBAN			RURAL		
	1979 Ratio	1981 Ratio	1983 Ratio	1979 Ratio	1981 Ratio	1983 Ratio
Newfoundland	2.00	1.94	2.39	1.11	1.69	2.56
P.E.I.	35.44	10.75	6.28	3.77	2.75	1.75
Nova Scotia	4.50	4.38	3.22	0.81	0.96	0.79
New Brunswick	2.00	2.58	2.39	1.52	1.42	1.44
Quebec	0.70	1.07	0.76	2.25	1.91	1.45
Ontario	0.33	0.24	0.47	0.08	0.15	0.54
Manitoba	0.44	0.97	2.04	0.29	0.28	0.46
Saskatchewan	4.77	2.87	2.24	0.45	0.36	0.43
Alberta	1.64	1.13	1.22	0.12	0.17	0.35
British Columbia	1.16	1.75	1.53	0.38	1.08	1.20

Source: RRAP Administrative Data 1979-1983
Census 1981, Statistics Canada

1. Service ratio is % of TOTAL TAKEUP / % of TOTAL NEED.

Over the period, a realignment towards the distribution of repair need appears to be occurring. The data show, however, that the intent of the Capital Budget Control Plan is not being addressed in all provinces, in total or on an urban/rural basis. However, in rural areas, even without a specialized allocation instrument, the takeup has been more consistent with need than in urban areas.

Summary

There is some evidence to support the hypothesis that the Capital Budget Control Plan has been associated with an improvement in the coincidence of the delivery of RRAP resources with repair need by province. In addition, even without a specialized allocation instrument, in rural areas the takeup was aligned fairly closely to repair need over the years examined.

In spite of the improvement in the allocation process, it is apparent that other factors also influence the distribution of resources. This is demonstrated by the substantial shift in resources which has occurred in several provinces, notably Newfoundland and P.E.I., which is clearly not related to repair need.

In terms of the total RRAP budget, little progress has been made in aligning the total budget with repair need on an urban/rural basis. An increase in the proportion of resources given to rural areas, in the first allocation of 1983, made it difficult for any improvements in allocations to be achieved in that year.

Finally, as discussed in the program rationale section of the evaluation, it is difficult to establish resource allocations merely on the basis of the proportion of need for repair. Other factors must be considered. For example, while an area may contain only a small fraction of the overall need, either rural or urban or total, the incidence of dwellings in need of repair in that area may be very high. This could justify an additional allocation to that area because of the local severity of the problem. This has been the case in much of the Atlantic Region since the inception of the program.

As discussed in the rationale section of the evaluation, a program such as RRAP, can be expected to respond to a variety of government objectives. These may justify an imbalance in resource allocation, for example, between Urban and Rural RRAP, as a component of a broader government objective.

E. Program Delivery - Delivery Agents

Since the inception of the program in 1974, RRAP has been delivered through a combination of administrative arrangements which have varied across the country. Initially, urban municipalities were offered the option to deliver the program or to delegate this responsibility to CMHC. Most municipalities delivered RRAP to their residents in conjunction with NIP. Since the termination of NIP in 1978, most municipalities have continued to deliver RRAP.

Municipal delivery was believed to be appropriate since, in many cases, a delivery infrastructure was already in place. As well, the program placed a great deal of emphasis on the adoption of Maintenance and Occupancy Standards by the municipality. Municipal agents are paid a delivery fee by CMHC which is calculated from the number of loans and units delivered.

In rural areas, a variety of delivery options and agent types are used. RRAP is delivered by non-profit organizations, native band councils, regional and municipal governments and private firms and individuals. CMHC delivers RRAP where low volumes of activity or remote location do not warrant a separate delivery agent. In some cases, CMHC does the inspection work while a separate agent delivers the program. Delivery fees in rural areas are based on number of loans and units and, in some areas, distance travelled and remoteness.

The distribution of RRAP loans by delivery agent type for 1981 is shown in Table 5.17. Over 90 per cent of the loans were delivered by various levels of the public sector. Municipal agencies delivered over half of all loans.

Agent Type	TABLE 5.17 RRAP LOANS BY AGENT TYPE (1) - 1981	
	Number of Loans	Adjusted Percent
Native Organization	106	4.7
Private Firm	80	3.5
Municipal Agency	1 240	54.6
CMHC Direct	87	3.8
Regional Agency	282	12.4
Provincial Agency	475	20.9
Not Specified	131	-
Total	2 401	100.0

Source: RRAP Physical Inspections 1982

- (1) Agent type recorded from agent identification on RRAP Work Specification form (CMHC 1855) for each case in the current (1981) sample.

Two aspects of delivery by agents are examined in this section of the evaluation: quality of delivery and delivery fees. The assessment of quality of delivery includes the condition of the dwellings after RRAP and the recipients' perceptions of the delivery process. The examination of delivery fees includes data from case studies of delivery agents representing each agent type.

1. Quality of Delivery

The type of delivery agent that delivers a RRAP loan is one factor which may influence the effectiveness of the program and the achievement of the program objectives.

While it may not be possible to isolate the specific effect of agent type, the following no effect hypothesis can be tested:

Type of delivery agent has no effect on the achievement of program objectives.

Two measures were used to assess the achievement of program objectives -- dwelling condition and client perception of the program. Dwelling condition can be assessed using the indices developed in the objectives achievement chapter. These included substandard items, incomplete items, quality of workmanship and appropriateness of materials, items related to health, safety and useful life, and maintenance practices¹. Perception of the program includes client attitudes and satisfaction with RRAP overall, the helpfulness of the agents and inspectors, the speed in processing the application, the amount of paperwork, and their understanding of the program.

In order to quantify the impact of agent type, the mean score on each measure and the range between the best and worst scores was calculated for each agent type. Analysis of variance was used to establish the existence of statistically significant relationships between agent type and the performance measures. The extent of the differences between agent type is shown by the proportion of dwellings or clients with standard or satisfactory ratings on each measure.

Table 5.18 shows the results of the analysis of the seven dwelling condition measures and the four client perception measures. In terms of dwelling condition after RRAP, clearly both CMHC offices and native delivery agents consistently ranked lower than other agent types. Private agents and individuals ranked the highest, and other public sector delivery agents also received positive ratings.

The table also shows the proportion of dwellings having no substandard ratings on the dwelling condition indices

¹ Each index can be used to assess the presence of at least one substandard item in the dwelling or to count the total number of substandard items in the dwelling. The maintenance measure provides only a rating of the quality of the maintenance practices.

by agent type. Differences of from 10 to 35 percentage points exist between agent types. On this indicator, CMHC delivery again fared the worst, showing the lowest proportion of satisfactory dwellings on six of the seven measures.

The analysis of the client perceptions of the delivery process revealed similar results. CMHC delivery consistently rated the worst on the four measures where statistically significant differences were found. Private firms and regional agencies rated the highest. Native agents received among the highest scores from clients on satisfaction with delivery.

Overall, it is worth noting that, although significant differences by agent type were found, the perceptions of clients were generally very positive. For all measures, the vast majority of clients were satisfied, although a range of from 14 to 34 percentage points existed between the highest and lowest ranked agent types.

Although it is clear that significant differences exist between types of agent, other compounding factors could account for some or all of this difference. For example, since CMHC acts as an agent of last resort in many areas, the circumstances of loans delivered by CMHC may be more severe. The initial need for repair may be greater and the availability of resources, materials and labour, may be much less.

Two explanatory models were developed to assess the effect of agent type on dwelling condition and perception of the program¹. When the effect of the other significant variables, age of household head, dwelling age and region, was held constant, agent type continued to exert an effect on dwelling condition. Similarly, perception of the program continued to be affected by agent type when the effects of age of household head, total cost of repairs and region were held constant.

¹ The models also included other variables; age of household head, age of the dwelling, total cost of repairs, number of elements RRAped, amount of forgiveness, household income, settlement size and region. Only the statistically significant variables are reported.

TABLE 5.18
AGENT PERFORMANCE - DWELLING CONDITION AND CLIENT SATISFACTION BY AGENT TYPE

Signif	Native Org.		Private Firm		Municipal Agency		CHRC Direct		Reg. Agency		Prov. Agency	
	Mean	Standard	Mean	Standard	Mean	Standard	Mean	Standard	Mean	Standard	Mean	Standard
DWELLING CONDITION MEASURES												
Substandard Items	1.9	45.9	0.7	61.0	1.3	48.2	1.7	30.7	1.2	54.2	1.5	44.1
Incomplete Items	1.5	46.6	0.7	63.5	1.1	51.8	1.5	35.5	1.1	56.9	1.3	49.2
Substandard Work	0.6	74.2	0.2	89.6	0.3	79.7	0.2	80.6	0.2	90.0	0.2	86.6
Substandard Health Items	0.8	60.7	0.3	83.2	0.6	61.5	0.7	33.8	0.5	77.0	0.5	68.4
Substandard Safety Items	1.1	44.2	1.2	45.3	0.9	49.0	1.5	19.2	1.2	37.8	0.0	48.7
Sub. Useful Life Items	1.0	62.1	0.5	69.4	0.7	60.9	1.0	40.0	0.7	62.4	1.0	54.2
Quality of Maintenance	4.8	85.6	5.8	86.3	5.5	86.6	4.8	57.2	5.7	91.7	5.9	89.2
CLIENT PERCEPTION MEASURES												
Overall Satisfaction	6.5	94.8	6.3	96.4	6.1	89.1	5.3	80.7	6.3	94.8	6.2	91.4
Helpfulness of Agents	6.3	92.6	6.5	96.7	6.3	90.8	5.3	68.9	6.5	97.0	6.2	92.7
Helpfulness of Inspectors	5.9	76.9	6.1	87.6	6.0	87.0	5.0	60.5	6.3	92.0	6.1	89.0
Speed in Processing	6.2	85.1	6.1	93.8	6.1	89.6	5.1	62.0	6.4	95.7	6.0	87.2

Source: Dwelling Condition Measures - RRAP Physical Inspections 1982
Client Perception Measures - RRAP Client Surveys 1982

1. Significance of the T-test in an analysis of variance for each measure - *** significant at the 0.001 level
** significant at the 0.01 level
* significant at the 0.05 level
2. For each dwelling condition measure, the table shows the mean number of substandard items per dwelling and the proportion of dwellings with no substandard items on that index.
3. For each client perception measure, the table shows the mean satisfaction rating (1-7) and the proportion of clients who were satisfied (rating of 5, 6 or 7 on a 7-point scale).

Summary

The data clearly supports the rejection of the no effect hypothesis. That is, both measures, condition of the dwelling and perception of the program, were affected by the type of delivery agent. Other variables were found which influenced the measures, but these did not negate the influence exerted by type of agent.

In particular, dwelling condition was better where the program was delivered by private firms, regional and provincial agencies and, to a lesser extent, municipal agencies. Loans delivered directly by CMHC offices and by Native organizations consistently involved poorer dwelling condition, on most indicators measured.

Client perceptions of the program were similarly influenced by agent type. Perceptions were more favourable where loans were delivered by Native organizations, private firms and regional agencies. As with dwelling condition, perception of RRAP was poorest where CMHC delivered the loans.

2. Delivery Fees

This section will examine the appropriateness of the delivery fees which are paid to agents, by CMHC, for the delivery of RRAP. The analysis looks at the relationship between the fee structure and the activities undertaken by agents in the delivery of the program.

¹ The models also included other variables; age of household head, age of the dwelling, total cost of repairs, number of elements RRAPed, amount of forgiveness, household income, settlement size and region. Only the statistically significant variables are reported.

The current fee structure was based on a study prepared for CMHC in 1976¹. This study itemized the steps required in the delivery process, the time required to carry out each step and incorporated the salary levels of appropriate staff. One basic fee was established across the country, both for homeowner and rental loans. As shown in Table 5.19, the fee of \$400 applies to homeowner loans and to the first unit of a multi-unit rental loan. A fee of \$50 is provided for each additional rental unit covered by the loan. The basic fee is allocated according to the schedule of delivery activities identified in the 1976 study.

TABLE 5.19
RRAP DELIVERY FEE STRUCTURE

Delivery Step	Rural	Urban		
	\$	Homeowner \$	Rental(1) 1st Unit \$	Add'l \$
1. Preliminary Application	40	70	50	-
2. Initial Inspection	80	50	70	10
3. Work Specification, Cost Estimate	60	85	85	15
4. Final Application, Approval	100	85	85	10
5. Progress Reviews, Final Inspection	120	110	110	15
TOTAL	400	400	400	50

Source: RRAP Delivery Handbooks

1. Rental fee structure also applies in rural areas.

¹ Barton-Aschman Canada Ltd., The Conduct of the Residential Rehabilitation Assistance Program (RRAP), Toronto, February, 1976.

In 1984, the delivery fee structure for Rural RRAP was adapted to reflect the higher costs, particularly travel, associated with the delivery of RRAP in northern and remote areas. The majority of the additional amount was allocated to the last step in the process, which involves the greatest amount of travel. Table 5.20 shows the new maxima which ranged to \$850 in Labrador.

TABLE 5.20
RURAL RRAP DELIVERY FEE MAXIMA

Location	Maximum Fee \$
Labrador	850
Newfoundland	500
Prince Edward Island	400
Nova Scotia	450
New Brunswick	450
Quebec	400
Ontario (North)	500
Ontario (South)	400
Manitoba	500
Saskatchewan (North)	575
Saskatchewan (South)	400
Alberta (North)	600
Alberta (South)	424
B.C. (Prince George)	500
British Columbia (Other)	400
N.W.T./Yukon	400

Source: Rural RRAP Delivery Handbook, 1984.

The following hypothesis on the appropriateness of the delivery fee structure can be tested:

The fee structure and administrative arrangements for RRAP delivery contribute to the achievement of program objectives.

Ideally, the testing of this hypothesis would be supported by data which identifies the required delivery steps, time required, skills required (and appropriate salaries) and relates this to the achievement of the program objectives. Factors which impact on the delivery process and either increase or decrease costs would be taken into account.

The data for this analysis comes from a study of RRAP delivery undertaken for the evaluation.¹ The results are limited by the small, case study approach which was used, thus reducing the generalizability of the data. Other supporting data is taken from CMHC time-reporting records, representations from CAHRO regarding fee increases and previous evaluation reports.

Table 5.21 provides an indication of the appropriateness of the current agency fee structure. On the surface, it appears that an increase to the fees is both desirable and justifiable. All delivery agents, with the exception of CMHC offices, requested substantial increases in fees. In most cases, these same agents have, in fact, incurred costs in excess of the fees paid.

TABLE 5.21
RRAP AGENCY FEES - 1982

Agent (1)	Desired Fee \$	Current Fee \$	Delivered Cost (2) \$	Difference \$
Corner Brook (CMHC-Rural)	-	450(3)	643	193
Metis Association (Independent-Rural)	600	486	456	-30
Chilliwack (Municipal-Urban)	500	400	317	-83
Burnaby (Municipal-Urban)	-	400	618	218
Winnipeg (Municipal-Urban)	650	400	1120	720
Hamilton (Municipal-Urban)	800	400	641	241
Sault Ste. Marie (Municipal-Urban)	650	400	1387	987
Sault Ste. Marie (CMHC-Rural)	-	450(3)	600	150
Sask. Housing Corp. (Provincial-Rural)	600	400	595	195

Source: Review of the RRAP Agency Fee, 1983.

1. No information available for the New Glasgow agent.
2. Delivered cost=actual costs/loans (equivalent) delivered.
3. Estimated.

¹ Peat Marwick and Associates, Review of the Residential Rehabilitation Assistance Program Agency Fee, October, 1983.

Closer examination of the data reveals extreme differences across agents in the costs of delivering a loan. Delivery costs range from \$300 to \$1400. Among urban agents, the difference is more than 100 per cent. These differences indicate that, while the fee may warrant examination, other factors associated with the delivery of RRAP warrant close scrutiny as well. For example, the very wide range of costs suggests that varying amounts of time and skill levels are invested per loan.

Some comments from CAHRO in their 1979 report¹ on fees might help to explain this phenomenon. CAHRO requested additional fees for advertising, initial meetings with residents and the answering of preliminary inquiries. Funds were also requested for administration, handling of staff, filing of reports for the municipality and other supervisory functions related to the delivery. Unsupported managerial functions are partly why fees do not fully cover the cost of delivering RRAP.

Looking at only the urban municipal delivery agencies surveyed (five of the case studies), broad variation in costs were still found (ie. the lowest and highest costs are in this group). Thus, a homogeneous cost structure in urban delivery cannot be established. Higher costs might have been expected in rural areas, where transportation costs have been shown to be greater, but were not found. In all cases, however, salary costs amount to 70 per cent or more of total costs involved in delivering a loan.

Agent budgets are established on the basis of total loan approvals. This budget is used to establish the office, hire the staff, and plan the year's activities. This total budget amount is therefore the key to the efficient running of an office. If the volume of loan activity does not generate sufficient revenue to operate the agency, delivery problems are likely to ensue and costs to deliver each loan would be expected to increase. An indication of the extent of this phenomenon is the 'capacity' indicators derived in the fee study.

¹ A submission of the New Brunswick Chapter of CAHRO regarding agency fees, July 18, 1979.

Table 5.22 shows the relationship between higher numbers of loan approvals and higher 'productivity' measures. Conversely, lower numbers of loan approvals are associated with lower productivity measures. There is also an association between percentage of staff time and number of loan approvals. The highest percentage of staff time devoted to RRAP occurs in offices with the greatest number of loan approvals. Although limited numbers of offices have been surveyed, the volume of work is clearly related to the 'efficiency' of the office.

TABLE 5.22

RRAP AGENCY CAPACITY INDICATORS

Agent	Staff Time Devoted To RRAP(1) %	Productivity(2) %	1982 No. of Loan Approvals
Corner Brook (CMHC-Rural)	23.7	32.5	78
Metis Association (Independent-Rural)	n/a	68.0	376
Chilliwack (Municipal-Urban)	24.7	59.2	134
Burnaby (Municipal-Urban)	n/a	54.2	107
Winnipeg (Municipal-Urban)	84.8	37.0	617
Hamilton (Municipal-Urban)	64.4	65.1	400
Sault Ste. Marie (Municipal-Urban)	18.9	22.9	47
Sault Ste. Marie (CMHC-Rural)	45.3	59.2	71
Sask. Housing Corp. (Provincial-Rural)	58.9	85.2	411
New Glasgow (CMHC-Rural)	n/a	19.1	49

Source: Review of the RRAP Program Agency Fee, 1983

1. Staff Time Devoted To RRAP Activity = $\frac{(\text{hours/loan}) (\% \text{ of loan equivalents})}{\text{total staff hours}}$
2. Productivity = $\frac{\% \text{ of loan equivalents}}{\text{full-time staff equivalents}}$

A correlation between the staff time devoted to RRAP and the number of loans approved shows a positive relationship ($r=.93$) between the two variables. An examination of productivity and the number of loans approved, produced an insignificant correlation ($r=.43$). If one eliminates Winnipeg, which is an extreme case, a greater correlation at a higher level of significance results ($r=.80$, $\text{prob}=.01$).

This finding suggests the difficulty of assessing the appropriateness of the fee for all offices and emphasizes the importance of the volume of loans delivered in assessing the fee. Expressed another way, a minimum number of loans must be delivered in order to recover costs, and in some offices, this is not occurring. In addition to volume of loans delivered, the study identified other factors which have an impact on the cost of delivery.

As mentioned previously, salary costs vary widely across offices and account for almost three quarters of the cost. The average salary per staff equivalent ranges from \$16 885 in Chilliwack to \$29 469 in Burnaby. These differences reflect the number of employees, skills of employees, supervisory and managerial personnel, as well as regional differences in salary scales. Generally speaking, RRAP coordinators and inspectors have similar skills, training and experience, although the inspectors may or may not have actual experience in construction skills.

Travel costs vary much more, but form a smaller component of the total cost, ranging from less than 2 to almost 25 per cent. Rural agency fees are based upon higher transportation-related costs (time in the field also influences salaries) as much more time and distance is required for making site visits. This factor is borne out by the results of the fee study.

Other costs are small in comparison in most offices. Variability is high however, as these costs range from a low of 3.6 to a high of 20.1 per cent. The highest costs were in Winnipeg, an office in which RRAP shares overhead costs with other programs. The amounts estimated are therefore very rough.

Other factors which affected the cost structure in delivering RRAP loans that emerged from the study were the variation in numbers of visits made to clients and the amount of advice and assistance required in servicing rural and senior citizen clients. It was found that many

municipalities are quite willing to spend extra time on these concerns and exceed the revenues generated.

Summary

The analysis indicates that the current fee structure may require some modification; however, the case study approach only shows a trend and does not permit generalization to all delivery agents. In addition, the information does not assist in determining the extent of change required in the fee.

The data, however, has shown that substantial variation exists in the cost incurred in delivering a RRAP loan. These differences pertain to the amount of time spent delivering a loan, which includes a wide variation in activities, salaries, which consume over 70 per cent of most budgets, and transportation. Salary and transportation costs, due to excessive travel requirements, are proportionally higher in rural areas.

In addition, salary costs are related to the delivery time per loan, which has been proven to be positively correlated with low productivity. Higher productivity has also been positively correlated with higher number of loans approved. It would appear that managerial functions tend to unduely increase costs per loan. Seasonal fluctuations in loan activity can increase inefficiencies in delivery, although in some agencies, this has been compensated for by using seasonal contract staff to lower costs. In offices with very low activity, there may not be much potential for increasing efficiency without enhancing the level of RRAP activity.

F. Program Delivery - Remote Areas

In this section, the delivery of RRAP in remote areas is examined. Remote areas are not likely to have access to skilled contractors or common building materials and supplies. In addition, the awareness of emerging construction technology which could improve housing quality and useful life or reduce costs, may not be high. For these reasons, special attention has been given to these areas to ensure equity in the delivery of RRAP. If this treatment of remote areas ensures that remoteness does not affect the achievement of program objectives, then the following hypotheses can be tested:

- a) The proportion of RRAP loans in remote areas is comparable to the proportion in other rural areas of the country.

- b) The quality and completeness of repairs and client satisfaction with the program in remote areas are comparable to that in other rural and urban areas.

Using a county-based definition, a remote area was defined as a county with no major urban centre (more than 25 000 people), mainly rural and with only one or no road access with the neighbouring counties. This definition was also extended to areas where large counties are composed of a single urban centre within a rural, predominantly uninhabited, area.

Table 5.23 shows the remote counties used for this analysis. The 1981 Census population estimates for these areas were used to compare the level of RRAP penetration. The population of large urban centres (Schefferville, Thunder Bay, etc.) were removed from the calculations. Number of RRAP loans per capita will be used to represent RRAP penetration as repair need data is not defined at the required level of disaggregation for these areas. Measures of quality, completeness and client satisfaction with RRAP, which were developed in the analysis of objectives achievement, were used for this analysis.

A service ratio was calculated which compares the level of RRAP activity in remote areas with the level of activity in rural areas¹. Nova Scotia, New Brunswick and Prince Edward Island were excluded from the analysis as there are no remote areas within these provinces for comparison purposes. Similarly the Northwest and Yukon Territories were excluded since they are totally defined as remote.

Table 5.24 shows the levels of RRAP activity per capita for remote and rural areas by province. Overall, remote areas were slightly under-served relative to rural areas. The data shows that remote areas in Newfoundland, Ontario and Saskatchewan were over-served when compared to rural areas. Quebec, Manitoba, Alberta and British Columbia were relatively under-served in remote areas.

¹ Service ratio is calculated as Remote RRAP loans per capita / Rural RRAP loans per capita.

TABLE 5.23
REMOTE AREAS AND POPULATION

Province	County Name(1)	Population	Cities Removed
Newfoundland	Burin	30 063	-
	South Shore	25 952	-
	Long Range	25 498	-
	Labrador	30 996	-
Quebec	Iles de la Madeleine	14 047	-
	Saguenay	114 659	Baie Comeau Sept-Iles Port-Cartier
	Temiscamingue	52 003	
	Nouveau Quebec	40 818	
Ontario	Cochrane	96 032	Timmins, Hearst Kapuskasing Iroquois Falls Cochrane
	Kenora	58 940	Kenora, Dryden
	Manitoulin	10 873	-
	Rainy River	22 567	Atikokan
	Thunder Bay	152 552	Fort Frances Thunder Bay
Manitoba	Interlake	12 165	-
	The Pas	24 475	-
	Thompson	26 395	-
	Churchill	9 901	-
Saskatchewan	Lac La Ronge	24 989	-
	Fort McMurray	82 601	-
	High Level	24 247	-
Alberta	Fort McMurray	82 601	-
	High Level	24 247	-
British Columbia	Bulkley-Nechako	37 903	-
	Caribou	58 613	-
	Kitimat	41 974	-
	Mt. Waddington	14 500	-
	Central Coast	3 023	-
	Peace River	54 581	-
	Skeena-Queen Charlotte	23 763	-
	Stikine	1 940	-
Yukon/NWT		67 368	-

Source: Population from 1981 Census, Statistics Canada

1. If no precise name is associated for Census purposes, the name of the main center or a special feature of the area was used.

TABLE 5.24
RRAP ACTIVITY LEVELS -
REMOTE AND RURAL AREAS, 1974-1984

Province	RRAP Activity				
	Remote Areas		Rural Areas		Service Ratio(1)
	No. of Loans	No. of Loans Per 1 000 Pop.	No. of Loans	No. of Loans Per 1 000 Pop.	
Newfoundland	1 440	28.1	4 730	5.9	4.8
Quebec	2 912	19.0	30 390	34.0	0.6
Ontario	1 467	11.7	2 760	3.5	3.3
Manitoba	564	9.7	2 196	12.7	0.8
Saskatchewan	66	22.1	3 427	18.3	1.2
Alberta	349	6.9	2 045	8.3	0.8
British Columbia	2 372	12.9	5 803	22.4	0.6
All Provinces	9 170	15.1	51 351	18.6	0.8

Source: RRAP Administrative Data 1974-1984
Census 1981

1. Service ratio is Remote loans per capita/Rural loans per capita.

On an annual basis, this under-serving of remote areas is not a major problem, representing less than 30 loans per year. However, the total difference from 1974-1984 equals almost 300 loans; a difficult amount to recover in a short timeframe. The service ratios show that the shortfall in remote areas is particularly severe in Quebec and British Columbia.

Table 5.25 presents a comparison of several measures of quality and completeness of repairs and client satisfaction with the program, for remote, rural and urban loans. With regard to completeness, remote units have not fared as well as non-remote units on the safety and useful life indices. However, they fared as well, or better, in terms of having all items standard or complete and on the health index. On measures of quality, the remote units were generally as good as non-remote units. Although remote clients were generally pleased with RRAP, two areas of difference were apparent. Remote clients were less satisfied with the helpfulness of building inspectors and the speed in processing the loan than were non-remote clients. This is not surprising given the difficulty of access to these remote areas.

TABLE 5.25
INDICENCE OF STANDARD CONDITION AND SATISFACTION RATINGS-
REMOTE AND NON-REMOTE AREAS

	Remote %	Rural %	Urban %
COMPLETENESS VARIABLES	(N=107)	(N=677)	(N=864)
No Substandard Items	48.8	48.2	49.1
No Incomplete Items	52.0	52.3	55.2
No Substandard Items On:			
Health Index	70.1	68.1	64.5
Safety Index	32.4	39.7	48.2
Useful Life Index	55.5	56.9	62.3
QUALITY VARIABLES	(N=141)	(N=1078)	(N=1198)
Workmanship	93.7	94.9	92.7
Materials	87.8	93.4	86.7
Maintenance	81.9	85.6	83.8
Overall Dwelling Condition	91.9	87.3	89.8
SATISFACTION VARIABLES	(N=73)	(N=710)	(N=416)
Helpfulness of Agent	87.1	92.8	90.9
Helpfulness of Inspector	76.7	89.0	85.9
Speed in Processing	82.5	89.4	91.2
Understanding of RRAP	77.1	78.4	81.5
Overall Satisfaction with RRAP	90.4	90.6	89.7

Source: RRAP Physical Inspections 1982
RRAP Client Surveys 1982

Summary

Remote areas have received 9 170 RRAP loans since the inception of the program but are still generally under-served in proportion to their population. This has resulted in a shortfall, proportionally, in remote areas of almost 300 units. This is particularly evident in Quebec and British Columbia.

In those dwellings in remote areas which were RRAPed, the quality of work undertaken was comparable to that in non-remote areas. Remote dwellings were, however, found to be poorer in terms of useful life and workmanship and materials. Remote clients were generally satisfied with the program. However, they were less satisfied with the helpfulness of inspectors and the speed in processing the loans.

VI. IMPACTS AND EFFECTS

In the preceeding chapters, the achievement of the program objectives and the impact of specific design and delivery features have been assessed. This chapter of the evaluation contains analysis of other impacts and effects that may have occurred as a result of the program. Both intended and unintended impacts will be investigated. In addition, the relationship of the program to other government programs will be examined.

The chapter includes the investigation of the impact of the program on overall housing and neighbourhood conditions, the generation of private rehabilitation activity, the unintended displacement of occupants and the impact of rental RRAP on the financial status of landlords. The relationship of the program with the rehabilitation industry will be examined, as well as with other government residential rehabilitation programs. The effect of RRAP on residential energy conservation will also be assessed.

The approach will be to specify the intended effect and to hypothesize potential unintended effects. The analysis will draw upon the findings of the objectives achievement and program design chapters, as well as introduce additional measures and data sources where necessary.

A. Housing Condition

Although the explicit objective of RRAP is to assist in the renovation of substandard housing, an implicit impact of the program is the improvement of the overall condition of the housing stock and the quality of neighbourhoods. This section will measure whether:

RRAP has had a positive impact on the overall quality of housing (of RRAPed dwellings) and on neighbourhood quality.

The best way to document these effects would have been to use an experimental design and to compare measures of house quality and of neighbourhood quality before and after RRAP. Having similar measures of the whole population of dwellings and neighbourhoods would have permitted a control of effects due solely to the existence of the program and not to its renovation effort. These measures could not be made for a variety of reasons and an alternate strategy had to be used.

The alternative was to compare the house condition and neighbourhood quality ratings for RRAP households with that of some sample or samples of the general population (in the absence of a focussed national study). To this end, two studies were used to provide information on dwelling and neighbourhood quality to represent the general population, and to provide comparisons with the RRAPed dwellings.

The Ottawa Pilot Study¹ covers the same physical condition ratings (inspector and client) and neighbourhood assessments as the RRAP surveys. The focussed nature of the sample makes it unrepresentative of the national dwelling condition. However, in the absence of a national survey of house condition, appropriate statistical controls for tenure, size of dwelling, building age and market value will at least partly level the sample differences. The Quality of Life Survey², gathered a very wide range of information from a representative sample of Canadians. Satisfaction with dwelling, quality of neighbourhood and state of dwelling compared to surrounding units are assessed in this survey.

Clearly, a number of caveats apply to this strategy. First, the measures are not strictly comparable. Although the wording may be close, the rating scales vary. The instruments themselves are not exactly the same in terms of their presentation and in terms of question order. The geographic bounds of the populations are not similar; particularly, the Quality of Life and RRAP Surveys are nation-wide. Eligibility criteria vary slightly from survey to survey while the Pilot Study is restricted to Ottawa. The sampling frames are obviously different although weights are present in each dataset in order to make the data representative of the respective populations. Non-response patterns may vary because of differing incentive levels. Even considering all these differences, it is still thought that the data are sufficiently comparable to contribute meaningful conclusions.

The analysis assumes that the previous condition of the dwellings which received RRAP assistance was worse than the comparative stock as no measure of condition before RRAP permits the verification of this assumption. Similarly, the previous condition of the neighbourhoods designated for RRAP assistance have to be assumed worse or at best not better than the overall universe of neighbourhoods. The ex post facto differences can be interpreted only if this is accepted.

1 Ekos Research Associates, Pilot Study of Physical House Condition and Rehabilitation Need, Ottawa, April 1981. Appendix I contains a description of this study.

2 Institute for Social Research, Social Change in Canada, York University, Toronto, 1981. Appendix I contains a description of this study.

The concept of "housing quality" was operationalized by means of a detailed quantitative analysis of various house condition indicators¹. It produced a series of nine indicators of physical condition, each of which represent a separate dimension of housing quality. They are:

- roof elements
- basement elements
- interior elements
- weatherproofness
- heating system
- plumbing system
- electrical system
- overall condition - inspector rating
- overall condition - occupant rating

House quality can be assessed in a subjective manner through the occupant's rating of his satisfaction with his dwelling and, in a comparative fashion, as better or worse than the state of other dwellings in the neighbourhoods. The physical condition ratings are available for RRAP dwellings and from the Ottawa Pilot Study. The assessment of satisfaction is present in the RRAP surveys and the Quality of Life Survey. The measure of neighbourhood quality is present in all three data sources.

Table 6.1 contains all of the quantitative results stemming from the comparative analysis of these indicators of housing and neighbourhood quality by data source. The analytical technique used is multiple regression. Each line of the table presents the results for the regression on the dependent variable shown in the first column. The intercept of the regression follows. The remaining columns show the regression coefficients for each variable, the significance of these coefficients and the standardized regression coefficients for each data source. The column containing non-applicable significance tests signals the reference category for that regression. Dependent variables are coded such that their value increases with increased quality. Thus, a positive regression estimate always means higher quality for the analysis category with regard to the reference group. Several control variables, tenure, surface area of dwelling, dwelling age and dwelling market value, were included in the regression analysis.

¹ See Appendix 2 for a summary of the analysis and a description of the measure.

The objective physical condition of the dwelling is analysed in the first nine regressions, six of which use inspector-measured dependent variables. Without exception, for these six more rigorous measures of physical condition, a positive parameter estimate is found and all these regression coefficients are significant at a very high level. This means that dwellings which received RRAP assistance are in better physical condition, as assessed by an inspector, than the Ottawa stock when controlling for the influence of tenure, dwelling size, age and market value. Most meaningfully better are the weatherproofness and roof elements.

According to the three physical condition measures made by the occupants, the heating system is in no better shape in RRAPed units than in non-RRAPed units, the plumbing system is not in worse condition in RRAPed dwellings and, overall, the physical condition of RRAPed dwellings presents more problems than non-RRAPed dwellings. There is an obvious inconsistency between these results of the occupant ratings and those obtained using the inspector ratings. One explanation for this is that because of their exposure to RRAP, occupants are more aware of the condition of their dwelling and therefore more critical of its condition.

In subjective terms, the overall satisfaction with the dwelling is not significantly different for any one category of households. Similarly, the comparative state of the dwelling is rated equally in each of the three surveys. Finally, no significant difference was found on the neighbourhood quality measure between the RRAP and non-RRAP areas.

Summary

Assuming that dwellings which received RRAP assistance were in a greater state of deterioration before RRAP than the comparison group, RRAP had a positive effect on the overall condition of the dwellings participating in the program.

As rated by trained inspectors, significant differences were found on measures of house condition and comparative state, between RRAPed and non-RRAPed (Ottawa) areas. While occupants of the RRAPed dwellings rated the condition as somewhat worse, this difference may be due to an increased awareness of the repair needs of the dwelling as a result of the exposure to RRAP. Given the deteriorated state of RRAP dwellings before RRAP, the difference afterwards implies a substantial improvement in house condition.

TABLE 6.1

HOUSE CONDITION AND NEIGHBOURHOOD QUALITY (1)

Dependent Variable	Data Source					
	RRAP		Quality of Life		Ottawa Pilot	
	Reg. Coef.	Signif. (2)	Reg. Coef.	Signif. (2)	Reg. Coef.	Signif. (2)
Roof Elements	0.76	**	-	-	0.00	na
Basement Elements	0.41	**	-	-	0.00	na
Interior Elements	0.30	**	-	-	0.00	na
Weatherproofness	0.96	**	-	-	0.00	na
Heating System (3)	-0.10	ns	-	-	0.00	na
Plumbing System (3)	-0.18	*	-	-	0.00	na
Electrical System	0.34	**	-	-	0.00	na
Overall Condition (Inspector)	0.45	**	-	-	0.00	na
Overall Condition (Occupant) (3)	-0.39	**	-	-	0.00	na
Satisfaction with Dwelling (3)	0.16	ns	0.00	na	-	-
Quality of Neighbourhood (3)	0.00	na	0.14	ns	0.68	ns
Comparative State of Dwelling (3)	0.00	na	-0.52	ns	-0.05	ns

Source: RRAP Client Surveys and Physical Inspections, 1982
 Quality of Life Survey - York University, 1981
 Ottawa Pilot Survey - Ekos Research Associates, 1981

1. Results of multiple regressions.
2. ** Significant at the 0.01 level
 * Significant at the 0.05 level
3. Occupant-rated item.

Finally, no difference was found in quality of neighbourhood between the RRAP clients, the Ottawa stock and a national sample. Once again, assuming that the state of the neighbourhood before RRAP was worse in RRAP areas than in non-RRAP areas (applicable to urban areas particularly but also somewhat to rural areas), a similar conclusion regarding the improvement of RRAP neighbourhoods can be drawn.

B. Generation of Private Rehabilitation

Since its inception in 1973, the delivery of RRAP has been closely linked to an "area designation" approach -- first, in association with the Neighbourhood Improvement Program (NIP) and more recently through the identification of specific areas in need of rehabilitation¹.

Various reasons have been offered for maintaining this approach. RRAP was introduced jointly with NIP, and it was believed that the impact of both programs would be increased if they could work together in specific deteriorated neighbourhoods. With the termination of NIP in 1978, the practice of targetting continued; one reason for this was the program's dependence upon a municipal delivery structure, which it was thought would become inefficient without the guarantee of a given level of activity associated with a concentrated approach. Although these reasons are valid, there was another, perhaps more important, reason for maintaining the targetted approach.

Specifically, RRAP is intended not only to repair older dwellings, but also to stabilize and preserve older, deteriorated neighbourhoods, where these dwellings exist. By virtue of using RRAP to make visible improvements in these areas, homeowners' and prospective homeowners' expectations regarding the future of these neighborhoods could be positively influenced. The intended result would be the acceleration of the rehabilitation process through private investment in dwelling repair.

¹ The generation of private rehabilitation is considered to be largely an urban phenomenon; however, a similar effect may also be reasonable to expect in rural towns since funds are also targetted under this latter program. The following analysis includes both urban and rural effects.

The generation of private rehabilitation through RRAP would be demonstrated, if there was a substantial increase in all rehabilitation activity in RRAP areas, as compared to similar non-RRAP areas. In addition, this higher level of rehabilitation activity could result in other differences in RRAP areas versus non-RRAP areas. The overall condition of the housing could have improved substantially. Similarly, using a non-housing measure, the quality of facilities (i.e. shopping, schools, parks) could have improved at a higher rate in the RRAP areas¹. Specifically, three hypotheses can be tested to assess whether the public intervention through RRAP has generated significant private rehabilitation activity.

- a) Rehabilitation activity is substantially greater in RRAP areas than in similar non-RRAP areas;
- b) The improvement in the condition of housing is greater in RRAP areas than in similar non-RRAP areas; and
- c) The improvement in neighbourhood facilities is greater in RRAP areas than in similar non-RRAP areas.

Ideally, generation of private rehabilitation should be measured by confirming with area residents that RRAP activity in neighbourhood dwellings has caused them to invest funds in their own dwellings. However, residents may not be aware of the dwellings in their neighbourhoods which received RRAP funds. It might not be clear whether a RRAPed dwelling or a dwelling rehabilitated privately at the same time was the real impetus for additional private rehabilitation. In any case, there is no source of data currently available to respond to this question.

Alternatively, if a pattern of rates of change of certain variables can be shown over time, taking into consideration the impact of public funds, then generation of private rehabilitation can be shown. However, the reasons for property owners undertaking rehabilitation work inside and outside of RRAP areas are not available; nor are any time series data which could set a base for the changes discussed above.

¹ Any improvement must take into consideration the direct impact of the RRAP Program. In addition, it should be noted that other influences, such as NIP, could also contribute to improvement.

As a result, certain assumptions must be made to develop operational evaluation criteria for this issue. First, the program has clearly been targeted to specific geographical areas (designated area approach) and the condition of housing in these areas at the time of RRAP was among the worst in Canada. This is substantiated by the eligibility criteria established for the NIP/RRAP Program, which required that more than 25 per cent of dwellings in a NIP area be in need of rehabilitation and that the mean household income for the area be below the municipal mean income¹. It should be noted, however, that the selection was not co-ordinated nationally; therefore there may be no similarity between "worst" in one municipality as compared to another.

Second, as only a small proportion of dwellings in RRAP areas have received assistance, private rehabilitation has not been overshadowed by high levels of public intervention. Table 6.2 shows that, nationally, 9 per cent of dwellings in RRAP areas have been rehabilitated with public funds. The proportion in Atlantic Canada is higher (26 per cent), indicating that a greater public effect would be expected.

TABLE 6.2
RRAP ACTIVITY IN RRAP AREAS BY REGION (1)

Region	Units in Area	Units RRAPed	% of Total
Atlantic	92 016	23 602	25.7
Quebec	237 919	20 488	8.6
Ontario	297 039	16 601	5.6
Prairies	204 589	21 976	10.7
British Columbia	264 446	15 669	5.9
Canada	1 096 009	98 336	9.0

Source: Rehabilitation Delivery Schedule, 1984.

1. As a result of realignment of Census Tracts used in the RDS system, a number of units in need of repair and units RRAPed are missing from this table. In addition, the RDS has only been updated to April 1984. Proportionally, this should not have an effect on this analysis.

1 NIP Operator's Handbook, CMHC 1975, pp E2-E4 (Indicators of Need).

Three proxy measures of generation of private rehabilitation, rehabilitation activity, housing conditions and condition of neighbourhood facilities, were developed to compare RRAP and non-RRAP areas. Data for RRAP areas was taken from the RRAP Client Surveys and Physical Inspections current (1981) clients only. Non-RRAP areas included dwellings in a comparable state to RRAP dwellings, that is, identified as being in need of major repair. Data for the non-RRAP areas was taken from the HIFE and Social Change in Canada¹ Surveys.

Table 6.3 presents the indicators used for the two groups for each measure. As can be seen, while the measures are not strictly comparable, they do measure similar phenomena. The findings will be strengthened if consistent patterns are observed.

TABLE 6.3
GENERATION OF PRIVATE REHABILITATION
MEASURES AND DATA SOURCES

Measure	RRAP Areas	Non-RRAP Areas
Rehabilitation Activity	Proportion of homes rehabilitated in last 5 years (divided by 5) (RRAP Client Survey).	Proportion of households which undertook repairs in last 3 years (divided by 3) (HIFE)
Housing Condition	Condition of adjacent housing (RRAP Physical Inspections). Satisfaction with neighbourhood (RRAP Client Survey).	Condition of housing in neighbourhood (Social Change in Canada Survey).
Condition of Neighbourhood Facilities	Condition of neighbourhood facilities (RRAP Client Survey).	Condition of neighbourhood facilities (Social Change in Canada Survey).

¹ Institute for Social Research, York University, Social Change in Canada, 1981. Appendix 1 contains a description of this data source.

Rehabilitation Activity

A logistic regression analysis between level of rehabilitation and RRAP/non-RRAP designation revealed that the type of area exerted a significant effect on the level of rehabilitation¹. The relationship did not change when the influence of household income, settlement size, region or dwelling age was controlled.

Table 6.4 shows both the proportion and absolute number of dwellings which undertook rehabilitation on an annualized basis in those RRAP designated and non-RRAP areas. Contrary to the hypothesis, a substantially higher level of rehabilitation takes place in the non-RRAP areas than in the RRAP designated areas. Specifically, rehabilitation activity in non-RRAP areas is 72 per cent higher than the RRAP sample. Since the regression analysis established that the remaining control variables were not significant, the balance of the table is presented only for information. It can be seen that some trends do exist, particularly across regions and dwelling ages.

Housing Condition

An analysis of variance was undertaken between neighbourhood housing conditions and RRAP/non-RRAP designation, once again controlling for secondary influences². The base relationship was strongly significant. The mean ratings of the two groups were compared and the results are shown in Table 6.5. Using the occupant ratings, the condition of the housing stock in RRAP areas was just over 40 per cent better than the condition of housing in the comparable non-RRAP areas (rating of 4.20 vs. 2.99). When controlling for the influence of region, the differences in housing condition across RRAP/non-RRAP areas in the Atlantic provinces are similar to the national differences; however, the difference is less in Ontario, the Prairies and British Columbia and greater in Quebec. In all regions, the perception of the condition of housing continues to be better in RRAP areas than in the comparable non-RRAP areas.

1 Since the dependent variable is dichotomous, a log linear analysis technique was used to determine if a significant relationship existed. The influence of several control variables was taken into account. The characteristics of those who had undertaken rehabilitation were then used, descriptively, to identify differences.

2 Region, settlement size, household income.

TABLE 6.4
REHABILITATION ACTIVITY
HOUSEHOLDS UNDERTAKING REHABILITATION
RRAP DESIGNATED AND COMPARABLE NON-RRAP AREAS

	RRAP Areas (n=889) Inc %	Non-RRAP Areas (n=3 133) Inc %
All	11.6	19.9
Urban Areas	10.6	25.0
Rural Areas	12.1	19.8
Atlantic	10.7	18.8
Quebec	14.5	20.0
Ontario	11.1	21.1
Prairies	9.4	18.5
British Columbia	8.5	19.8
BUILDING AGE		
Less than 13 Years	13.1	15.4
13-22 years	11.0	18.6
23-37 years	10.3	21.3
More than 37 years	12.0	21.0
HOUSEHOLD INCOME		
Less than \$13 000	11.5	18.5
\$13 000 - \$23 000	11.8	19.6
\$23 001 - \$40 000	9.3	21.0
More than \$40 000	11.5	20.3

Source: RRAP Client Surveys and Physical Inspections (current sample) 1982.
HIFE 82.

TABLE 6.5

HOUSING CONDITION
OCCUPANT AND INSPECTOR RATINGS (1)
RRAP DESIGNATED AND COMPARABLE NON-RRAP AREAS

	Non- RRAP Areas Mean	Occupant Ratings			RRAP AREAS			Sig.
		Mean	Diff.		Mean	Diff.		
All	2.99	4.25	1.26	***	3.97	0.98	***	
Urban Areas	2.91	4.15	1.24	***	3.96	1.05	***	
Rural Areas	3.09	4.31	1.22	***	3.98	0.89	*	
Atlantic	3.04	4.21	1.17	***	3.98	0.94	***	
Quebec	2.97	4.46	1.49	***	4.13	1.16	***	
Ontario	2.98	4.10	1.12	***	3.82	0.84	***	
Prairies	2.68	3.98	1.30	***	3.79	1.11	***	
British Columbia	3.04	4.13	1.09	***	3.76	0.72	***	
HOUSEHOLD INCOME								
Less than \$13 000	2.90	4.31	1.40	***	3.96	1.06	***	
\$13 000 - \$23 000	3.07	4.16	1.09	***	4.02	0.95	***	
\$23 001 - \$40 000	3.20	4.13	0.94	***	3.96	0.76	***	
More than \$40 000	3.33	4.39	1.06	**	4.01	0.68	ns	

Source: RRAP Client Surveys and Physical Inspections, 1982
Social Change in Canada, York University, 1981

1. Rated on a scale of 1 to 5 where 5 represents the best housing condition.

T significant at the *** 0.001 level
** 0.01 level
* 0.05 level

When controlling for household income, the data indicates that, for incomes less than \$13 000, the difference in mean house condition is greater in RRAP areas than the national average, while for higher income intervals, the differences are smaller. This is a reflection of particularly poor ratings in non-RRAP areas from households having incomes less than \$13 000; in RRAP areas, the scores across income intervals were comparable.

The second measure of housing condition uses the inspector's ratings of the dwelling. Once again, the base relationship between house condition and RRAP/non-RRAP designation was found to be highly significant. Region was again found to be a significant controlling variable.

Table 6.5 also shows the difference in means using the inspector ratings. Again, the perception of the condition of the housing is found to be better in RRAP areas, however, the difference is less than that found using the occupant ratings. A modified and consistent trend was also found when controlling for region, where the Atlantic region was similar to the national difference, the Prairies and Quebec were somewhat higher and Ontario and British Columbia were proportionally lower.

Condition of Neighbourhood Facilities

An analysis of variance was used to assess the statistical significance of the relationship between RRAP/non-RRAP areas and the perceived condition of neighbourhood facilities. The base relationship and the influence of household income were found to be statistically significant; region and settlement size were not.

Table 6.6 elaborates on the nature of these relationships using the difference in means. Specifically, the data demonstrates that RRAP/non-RRAP designation exerts a fairly strong influence on the perception of the condition of neighbourhood facilities. The condition of community facilities was rated better in RRAP areas by approximately 17 per cent.

Interestingly, the difference in rating of the condition of neighbourhood facilities between RRAP and non-RRAP areas was less than the difference in housing condition ratings which exceeded 30 per cent for the inspector ratings and 40 per cent for the occupant ratings.

TABLE 6.6

CONDITION OF NEIGHBOURHOOD FACILITIES⁽¹⁾
RRAP DESIGNATED AND COMPARABLE NON-RRAP AREAS

	Non- RRAP Areas Mean	Mean	Diff.	Signif.
All	2.95	3.44	0.49	***
Urban Areas	3.05	3.77	0.72	***
Rural Areas	2.89	3.24	0.35	ns
Atlantic	2.68	3.31	0.63	***
Quebec	3.03	3.34	0.30	**
Ontario	3.08	3.69	0.61	***
Prairies	2.82	3.69	0.87	***
British Columbia	2.92	3.65	0.73	***
HOUSEHOLD INCOME				
Less than \$13 000	2.92	3.51	0.59	***
\$13 000 - \$23 000	3.08	3.19	0.11	ns
\$23 001 - \$40 000	2.98	3.47	0.49	***
More than \$40 000	2.33	3.86	1.53	***

Source: RRAP Client Survey, 1982
Social Change in Canada, York University, 1981

1. Rated on a scale of 1 to 5 where 5 represents the best condition.

T significant at the *** 0.001 level
** 0.01 level

When controlling for household income, no clear trend develops, although some peculiar variations in differences occur. The ratings in non-RRAP areas are comparable for all income groups and with the national rating except for those earning more than \$40 000, where the rating drops by about 20 per cent. This poor rating for non-RRAP areas, coupled with higher ratings in RRAP areas for the over \$40 000 income group results in even greater overall differences favouring the RRAP areas as incomes increase.

Summary

Three measures were examined to determine if private rehabilitation resulted from public rehabilitation initiatives. These included rehabilitation activity, perception of housing condition and perception of the condition of neighbourhood facilities. RRAP designated areas were compared to comparable non-RRAP areas.

Using annualized rehabilitation activity rates, no data was found to support the hypothesis that RRAP resulted in higher levels of overall rehabilitation activity in designated areas. In fact, substantially lower levels of rehabilitation were found in RRAP areas.

Using perception of the condition of the housing, strong support was found for the hypothesis. Both occupants and inspectors rated the condition of housing significantly higher in RRAP areas than in the comparable non-RRAP areas. Region and household income were found to influence the nature of this relationship. The perception of housing condition in RRAP areas was found to be higher in Quebec and the Prairies and somewhat lower in Ontario and British Columbia. For household income, the difference in perception of condition diminished as income increased.

Using perception of the condition of neighbourhood facilities, the results were similar to the findings for the housing condition measure. Only household income influenced the relationship, that is, differences were substantially greater for the highest income interval.

The latter two measures indicate quite clearly that households in RRAP areas have a much more positive perception of housing condition and neighbourhood facilities than do households in non-RRAP areas. Although it is difficult to conclude that these positive opinions encourage private rehabilitation activity - particularly when the opposite relationship was found for rehabilitation activity - they do imply a supportive environment for improved neighbourhood expectations and, consequently, private

investment and rehabilitation activity. These positive effects were found to be strongest in Quebec and in the Prairie provinces and for higher income households.

In assessing the reliability of this data, one should remember that no pre-RRAP data was available and this resulted in the need to logically establish RRAP areas as being the worst or among the worst areas in Canada. In addition, the measures used, although not strictly comparable, were sufficient for the purposes of the analysis.

C. Occupant Displacement

Although not explicit, it would appear that the intent of the RRAP objective, to provide assistance to residents, is to ensure that safe, healthy and affordable housing is provided for low and moderate income households on a long-term basis. That is, it is desirable to keep these households in their current dwellings and to ensure that they benefit directly from the public assistance available.

One possible impediment to achieving this implicit goal is the potential for occupants being dislocated from their dwellings because of the rehabilitation activity. Displacement or dislocation occurs when occupants' decisions regarding their tenure in a particular dwelling are no longer in their control. Displacement is an involuntary process which occurs despite households having met all previously-imposed conditions¹.

Displacement is predominantly an urban phenomenon and can result from both disinvestment or reinvestment in a deteriorating neighbourhood. Many researchers would argue that displacement overall is not a problem, since it would occur with or without rehabilitation and the predominant

¹ Grier, George and Eunice Grier, "Urban-Displacement: A Reconnaissance" in Back to the City: Issues in Neighbourhood Renovation, eds. Laska and Spain, New York, Pergamon, 1980, pp. 252-268.

pattern in areas where disinvestment is occurring is abandonment, blight and out-migration¹.

Similarly, in a study of Boston rehabilitation neighbourhoods revitalization for most residents was seen as an opportunity to fulfill a long-term goal of leaving the neighbourhood and moving to the suburbs². In addition, most displaced households moved into better housing conditions close to their former neighbourhoods and could still participate in community events; however, their rents did increase³.

Although these arguments may be quite valid, it is not the intent of RRAP to force incumbent households out of their neighbourhoods once the reinvestment and rehabilitation process begins. Thus, an understanding of the impact of public rehabilitation on displacement is of great interest.

¹ Schussheim, Morton J., Inner City Restoration and Family Displacement, the Library of Congress, Congressional Research Service, 1978.

Sterulieb, G. and J. Hughes, "The Changing Demography of the Central City", Scientific American, August 1980.

Lipton, G., "The Future Central City: Gentrified or Abandoned?", Urban Affairs Papers 2, (Winter 1980), pp. 1-15.

Sunka, H., "Neighbourhood Revitalization and Displacement: A Review of the Evidence", Journal of the American Planning Association, October 1979, pp. 480-487.

Grier, G. and E., p. 253.

² Washington Urban League, SOS76: Speakout for Survival, June 1976.

³ Pattison, Tim, The Process of Neighbourhood Upgrading and Gentrification, Master's Thesis for MIT, Dept. of City Planning.

Displacement is most likely to occur in urban centres where there is a great deal of pressure on housing supply¹. Prospective homebuyers must consider other alternatives and older housing can be a more affordable option. Those most likely to choose inner-city housing are those who have always lived in the inner city. A number of studies, predominantly American, have shown that suburbanites are not likely "gentrifiers", and that there is no back to the city mobility pattern². In fact, in one study, most inner city homebuyers were previously inner city tenants³.

Both homeowners and renters can be dislocated⁴, although the reasons for and nature of displacement can vary. Homeowners can be dislocated by increased taxes and increased costs of local services; however, there are also opportunities for homeowners. Rehabilitation of deteriorated areas can inflate market prices, and permit lower income homeowners to move away from older neighbourhoods⁵. Tenants on the other hand are susceptible to the intentions of their landlords and can be forced out by rent increases or major

1 U.S. Department of Housing and Urban Development, Yardsticks for Assessing Displacement and Social Change, prepared by Donna L. Sorlein, 1982.

Sands, S., Population Change Due to Housing Renovation in St. Paul's Ramsey Hill Area, unpublished thesis, University of Minnesota Graduate School, June 1979.

D. Clairmont and D.W. Magill, Africville Relocation Report, Institute of Public Affairs, Dalhousie University, Halifax, 1971.

F.J. Henry and P.C. Pineo, The Consequences of Relocation: A Study of Hamilton's North End, 1983.

2 Grier, G. and E., p. 254.

3 Clay, P., "The Rediscovery of City Neighbourhoods: Reinvestment by Long Time Residents and Newcomers" in Back to the City, eds. S. Laska and D. Spain, New York, Pergamon, 1980, p. 14.

4 Schussheim, Morton J., 1978, p. 5.

5 Clay, Philip L., Neighbourhood Renewal, Lexington Books, 1979, p. 32.

rehabilitation activity¹. Tenants may also be forced to move by a negative perception of changes to community and life style resulting from rehabilitation activity²; however, this is not displacement as defined above.

Another important influence on tenant displacement is the control of rents - in the case of RRAP through rental agreements. A perception by the landlord of excessive rent controls can result in eviction of tenants prior to rehabilitation, while inadequate control over rents can result in excessive post-rehabilitation rent increases and the ultimate displacement of the tenant³. An interesting

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- 1 United States Department of Housing and Urban Development, Interim Displacement Report, p. 27-28.

U.S. Department of Housing and Urban Development, Yardsticks for Assessing Displacement and Social Change, prepared by Donna L. Sorkin, 1982, p. 11.
 - 2 Portland (Oregon) Bureau of Planning, Portland Residential Displacement Study, Survey Research Results, November 1981.

Sands, S., June 1979.

Schusshiem, Morton J., 1978, p. 5.

Portland (Oregon) Bureau of Planning, November 1981.

Clay, Philip L., p. 31.

U.S. Department of Housing and Urban-Development, p. 12.
 - 3 Canada Mortgage and Housing Corporation, RRAP: An Evaluation of Performance, August 1977.

Canada Mortgage and Housing Corporation, An Evaluation of RRAP for Landlords in Seven Municipal Areas, February 1978.

Canada Mortgage and Housing Corporation, A Follow-Up to the Evaluation of RRAP, April 1978.

Clinique d'Aménagement, Restoration: dossier-clinique. Université de Montréal, December 1976.

consequence of tenant displacement is a reduction in the low-rental stock¹. Studies have shown that most displaced households are tenants².

Probably the most important consideration in displacement is household income. By definition, reinvestment, gentrification or rehabilitation, result in the dislocation of lower income households by higher income households and a number of studies have identified this as a factor. Both education and occupation have also been found to be linked to income in the displacement process. Specifically, "inmovers" were better educated and more likely to work in professional and technical occupations³.

Several other characteristics of dislocated households have been identified. Displaced households tend to have a larger family size, in American cities have been predominantly black or minority groups and to some extent have been older in age⁴.

It is difficult to measure the extent of displacement and to determine where this becomes a real problem. A number of studies have been done in recent years, as shown in Table 6.7, and the estimated extent of displacement ranges from 1 per cent to 27 per cent. Some studies have examined just reinvestment areas, while others have studied all households in a municipality. Some studies have based their results on

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- 1 CMHC, Evaluation of Neighbourhood Improvement Areas, Vol. 3, Case Study 631.
 - 2 CMHC, An Evaluation of RRAP for Landlords in Seven Municipal Areas, February 1978, p. 35.
 - 3 Ibid, p. 34.
 - 4 Clay, Phillip L., p. 32.

Portland (Oregon) Bureau of Planning, 1981.

James, Franklin J., Back to the City: An Appraisal of Housing Reinvestment and Population Change in Urban America, Washington, D.C., The Urban Institute, December 1977.

U.S. Department of Housing and Urban Development, Movement of Blacks and Whites Between Central Cities and Suburbs of 11 Metropolitan Areas 1955-75, prepared by Kathryn P. Nelson, May 1978.

the views of landlords while others are based upon the views of a limited number of displaced households which could be traced.

In addition, all rates are not presented on an annual basis which causes them to appear to be more severe. For example, a rate of 27 per cent over a five-year period is actually only an annual rate of 5.5 per cent. Where mobility rates are used and found to be 3 percentage points greater than the national mobility rate of approximately 10 per cent is this to be considered a severe displacement situation?

It is interesting to note that the type of reinvestment also influences the extent of displacement. Pure gentrification is likely to produce the greatest dislocation, while upgrading through public promotion for incumbent homeowners, will result in less change to homeowner make-up¹.

The preceding discussion has highlighted some of the important concepts associated with occupant displacement. Three hypothesized relationships between RRAP and, displacement were derived, which consider mobility, income and tenure. Other hypotheses could be investigated which consider such factors as dwelling value, type of structure, number of rooms, age of household head, occupation, education and ethnicity. The following hypotheses will be tested:

- a) Since displacement forces people to move more often than they normally would, RRAP could be resulting in displacement if the mobility rates in RRAP areas are significantly greater than those in comparable areas.
- b) Since higher income households generally displace lower income households, a displacement effect of RRAP would be shown if the proportion of low-income households in RRAP areas decreased in relation to comparable areas.
- c) Since renters are most often the victims of displacement, a displacement effect of RRAP would be shown if the proportion of renters in RRAP areas decreased in relation to comparable areas.

¹ Schusshiem, Morton J. 1978, p.6.

TABLE 6.7

EXTENT OF DISPLACEMENT
SELECTED STUDIES

(Year)	Proponent	Location	Displacement	% of Time Frame	Study Name
An Evaluation of RRAP (1979)	Social Policy Research Assoc.	Canada		68-248	1974-79
Instability and Tenant Displacement Within the Inner City Rental Market (1979)	City of Ottawa	Ottawa		328	1975-80
A Study of Tenant Displacement Associated With the Residential Rehabilitation Assistance Program in Ottawa (1982)	Univ. of Ottawa	Ottawa		328	1975-80
Portland Residential Displacement Study Survey Research Results (1981)	City of Portland	Portland (Oregon)		498	1977-80
Seattle Displacement Study (1979)	City of Seattle	Seattle		208	1975-79
Market Generated Displacement: A Single City Case Study (1981)	HUD	Washington		10.28	1977-79
Neighbourhood Reinvestment and Displacement	Princeton U.	-		238	1982
Displacement in St. Paul 1981	City of St. Paul	St. Paul		58(1)	1980-81

1. Some neighbourhoods as high as 27%

Mobility rates at the census tract level will be used as a proxy measure of displacement. A precise measure of displacement would require tracking households which move and receiving confirmation that the move was non-voluntary. A number of past studies¹ have shown that tracing displaced households, particularly tenants, is a losing battle. Use of mobility rates is not a flawless measure either. First, it is not a direct measure of displacement and second, the census tract units are not fine enough to detect changes at the neighbourhood or block level². Thus, results will be supplemented with data from the survey of tenants living in dwellings which were rehabilitated with RRAP.

The analysis examined changes in mobility rates, proportion of low-income households and renters, for RRAP designated areas, comparable areas and the rest of Canada, controlling for region and, where possible, other explanatory variables. The study areas were aligned, as closely as possible, with Census tracts. The comparable areas were chosen from RRAP areas which were only designated in 1981 and therefore would not show any RRAP activity in the 1981 Census. This does not imply, however, that these areas were free of private rehabilitation.

As can be seen in Table 6.8, approximately 50 per cent of Canadians move every five years, or 10 per cent per year. Further, it can be seen that this overall trend has not changed dramatically between 1971 and 1981. Only a small decrease has occurred in the RRAP and non-RRAP areas over the ten-year period.

1 Rosen, Flora, Neighbourhood Change: The Displaced Tenant, November 1983.

Lapointe, Y. and A. Lenk, D. Meesseur, B. Milroy, A Study of Tenant Displacement Associated with the Residential Assistance Program in Ottawa, June 1982.

2 Lee, Barrett A. and Paula M. Magenhagen, "Is Revitalization Detectable? Evidence from Five Nashville Neighbourhoods", *Urban Affairs Quarterly*, Vol. 19, No. 4, June 1984.

TABLE 6.8
FIVE YEAR MOBILITY RATES - RRAP AND NON-RRAP AREAS

Year	RRAP	Non-RRAP		All Others (2)	
	Rate	Comparable (1) Rate	Diff.	Rate	Diff.
1971	52.63	50.78	1.85	52.00	0.63
1981	51.63	49.13	2.50	50.68	0.95

Source: Census Summary Tapes, 1971 and 1981, Statistics Canada

1. 1981 RRAP designated areas.
2. Includes all non-RRAP areas.

When RRAP areas are compared to more homogeneous areas, that is, areas designated in 1981 but which have not received any RRAP assistance, it can be seen that mobility rate in active RRAP areas is somewhat greater, implying a higher level of stability in the non-RRAP areas. However, the differences are small.

Table 6.9 shows that overall mobility generally declined between 1971 and 1981 in all regions and in all areas with the exception of RRAP areas in the Prairies. The increases in the Prairies, however, are less than one per cent per year and may be largely attributable to the influx of lower-income labour during the oil boom of the seventies.

TABLE 6.9
CHANGE IN MOBILITY RATES - RRAP AND NON-RRAP AREAS
1971 - 1981

Region	RRAP Areas	Non-RRAP Areas	
	Change	Comparable(1) Change	All Others(2) Change
Atlantic	-2.54	-1.98	-2.28
Quebec	-0.12	0.48	-0.52
Ontario	-3.25	-4.89	-4.78
Prairies	2.16	3.30	-2.47
British Columbia	-0.55	-0.12	-1.82

Source: Census Summary Tapes, 1971 and 1981, Statistics Canada

1. 1981 RRAP designated areas.
2. Includes all non-RRAP areas.

Overall, it can be seen that mobility rates in RRAP areas are not significantly higher than those in comparable (1981 designated) or other areas.

The proportion of renters in RRAP and non-RRAP areas is shown in Table 6.10. More than half the households were renters; more in RRAP areas than non-RRAP. The difference between RRAP and all other non-RRAP areas increased from 1971 to 1981. The renter proportion in the RRAP areas, however, was very similar to that in the comparable, non-RRAP areas.

TABLE 6.10
PROPORTION OF RENTERS - RRAP AND NON-RRAP AREAS

Year	RRAP %	Comparable(1) %	Non-RRAP		
			Diff	All Others (2) %	Diff
1971	57.55	56.54	1.01	49.96	7.59
1981	59.45	57.04	2.41	44.28	15.17

Source: Census Summary Tapes, 1971 and 1981, Statistics Canada

1. 1981 RRAP designated areas.

2. Includes all non-RRAP areas.

Table 6.11 shows the change in proportion of renters by region between the two Census surveys. The proportions decreased in the Atlantic and Quebec regions but increased in all regions west of Quebec. In the western regions, the increases were greater in comparable non-RRAP areas than in the other non-RRAP areas.

TABLE 6.11
CHANGE IN PROPORTION OF RENTERS - RRAP AND NON-RRAP AREAS
1971 - 1981

Region	RRAP Areas Change	Non-RRAP Areas	
		Comparable(1) Change	All Others(2) Change
Atlantic	-2.06	-2.26	1.19
Quebec	-1.91	-1.45	-1.68
Ontario	1.67	0.29	0.83
Prairies	1.72	5.64	4.33
British Columbia	2.37	4.61	2.21

Source: Census Summary Tapes, 1971 and 1981, Statistics Canada

1. 1981 RRAP designated areas.

2. Includes all non-RRAP areas.

The proportion of households with low-incomes is shown in Table 6.12. In RRAP areas the proportion of low-income households in 1971 was about 10 percentage points more than the proportion in the non-RRAP areas. This difference had increased to over 16 percentage points. In addition, the proportion of low-income households increased at a faster rate in RRAP areas than in other areas. Comparable areas were similar to the RRAP areas in both years.

TABLE 6.12
PROPORTION OF LOW-INCOME(1) HOUSEHOLDS - RRAP AND NON-RRAP AREAS

Year	RRAP %	Non-RRAP			
		Comparable(1) %	Diff	All Others (2) %	Diff
1971	34.92	33.29	1.63	24.28	10.64
1981	45.84	43.02	2.82	29.26	16.58

Source: Census Summary Tapes, 1971 and 1981, Statistics Canada

1. Low-income households are those earning less than \$13 000 annually.
2. Includes 1981 RRAP designated areas.
3. Includes all non-RRAP areas.

The regional breakdown, shown in Table 6.13, reinforces the differences between RRAP and non-RRAP areas.

TABLE 6.13
CHANGE IN PROPORTION OF LOW INCOME HOUSEHOLDS(1) -
RRAP AND NON-RRAP AREAS - 1971 - 1981

Region	RRAP Areas		Non-RRAP Areas	
	Change	Comparable(1) Change	All Others(2) Change	
Atlantic	7.42	5.77	3.02	
Quebec	8.95	9.69	5.72	
Ontario	12.20	11.60	7.98	
Prairies	6.29	4.61	3.98	
British Columbia	7.57	1.81	1.85	

Source: Census Summary Tapes, 1971 and 1981, Statistics Canada

1. Low-income households are those earning less than \$13 000 annually.
2. 1981 RRAP designated areas.
3. Includes all non-RRAP areas.

Additional evidence can be obtained from the survey of tenants in units rehabilitated with RRAP. As shown in Table 6.14, the survey found that, during 1984, almost one-quarter of the tenants in these units were new tenants. This figure is lower than the annual mobility rate for renters in Canada, which is just over 30 per cent¹. In addition, there are no significant differences between the distributions of old and new tenants by household income.

TABLE 6.14
PROPORTION OF NEW TENANTS - RRAPed RENTAL UNITS - 1984

	New Tenants %	Total Tenants N	Signif.
Total	24.9	1 085	-
Household Income			
Less than \$15 000	21.0	477	
\$15 000 - \$25 000	23.6	237	
More than \$25 000	20.8	202	ns

Source: RRAP Tenant Survey 1984

This section has shown that households living in RRAP areas move slightly more often than households living in non-RRAP areas. No difference was found, however, between the rates in active RRAP areas and those in designated but non-active areas. This finding is reinforced by other North American studies which did not find evidence of extensive displacement.

Comparisons of other measures support this finding. The proportion of low-income households and the proportion of tenant households were greater, and increased at a faster rate, in RRAP areas than in non-RRAP areas. However, in comparison with designated RRAP areas in which no RRAP activity had occurred, there was no significant difference. This supports the conclusion that displacement is not occurring at a faster rate in designated RRAP areas and that other factors besides RRAP are contributing to the displacement of occupants which is occurring.

¹ Statistics Canada, 1981 Census Summary Data (CTH81B15), Private Households by Tenure Showing Length of Occupancy.

D. Landlords' Financial Status

Rental RRAP is intended to ensure that affordable, safe and hazard-free housing is available for low and moderate income renters. This is accomplished by subsidizing the rehabilitation costs incurred by landlords. In attempting to address the needs of lower income renters, two unintended impacts are possible. First, the potential exists for landlords to assume an undue financial burden. Second, the RRAP assistance could enable landlords to pursue speculative opportunities.

With regard to the first impact, the substantial levels of private investment by landlords, 2.58 times the RRAP subsidy amount, implies the need for substantially higher rents to cover the financing costs which result. This may require correspondingly higher income renters.

The second impact is of greater concern to the Corporation since it reflects more directly upon the ability of the program to serve those renters in greatest need. Program guidelines limit the rent increases which may be imposed after the rehabilitation work has been carried out. Rents may be modified to take into account reasonable increases in costs.¹

The calculation of reasonable includes two factors; the pre-rehabilitation operating expenses and the landlord's contribution to the rehabilitation costs (total costs less RRAP forgiveness). The recovery of the rehabilitation costs is based on an amortization period of 20 years, regardless of the actual financing method used. After these initial adjustments have been made, a rental agreement is signed by the landlord which limits rent increases beyond this level. Annual rent increases are permitted up to a maximum established by CMHC or provincial rent review boards. In some cases, additional increases due to extraordinary costs are permitted.

The following hypotheses can be tested to assess the impact of the program on the financial status of landlords:

- a) Rental RRAP does not impose undue financial burden on landlords; and
- b) Rental RRAP does not provide landlords with opportunities for windfall gains.

¹. RRAP Guidelines and Procedures Manual, CMHC, 1981.

The analysis assumes that the pre-RRAP rental income was sufficient to meet the operating expenses of the property. An estimate of the required rent increase was calculated based on the cost of the rehabilitation work after government assistance was removed. An amortization period of twenty years was used. The actual rent increases were compared with the required increases to determine the impact on the landlord. No attempt was made to assess the appropriateness of either the pre or post-RRAP rents with respect to market rents as no geographically specific registry of rents was available.

Table 6.15 shows that the average rent increase after RRAP was 78 dollars (36 per cent). By rent intervals, the increases ranged from 19 to 47 per cent. Over 80 per cent of the units rented for 200 to 400 dollars after RRAP. For all units, the actual increase is close to the required increase at a 13 per cent interest rate. By rent interval however, there is no clear pattern.

Tenants were asked whether they considered the rent increases to be a financial burden. Table 6.16 shows that only five per cent of tenants considered the rent increase to be a very serious problem and only 22 per cent considered the increase to be a somewhat serious problem. Over 70 per cent considered the increase not to have been a problem. Of the tenants who received increases, the average increase was \$50 bringing the post-RRAP rent up to an average \$268 per month.

For landlords to be engaging in RRAP for purely speculative purposes, they would have to be most concerned with increasing the value of their property through the use of the RRAP subsidy. In this respect, the motives of landlords should be different from those of homeowners, who would be less likely to be engaging in RRAP for speculative purposes. The client surveys asked both homeowners and landlords for their assessment of the impact of the rehabilitation work on the market value of the property and the importance of various reasons for undertaking rehabilitation work.

Table 6.17 compares the proportions of homeowners and landlords who rated the work as increasing market value. No significant difference exists between the two groups. In the same manner, Table 6.18 compares the ratings of importance for a number of reasons for rehabilitating. While increasing the value of the property was rated important by more landlords, the difference was not great.

TABLE 6.15

RENT INCREASES AFTER RRAP REQUIRED(1) AND ACTUAL

Monthly Rent Group	Number of cases	Number of units (2)	Average Pre-RRAP Rent (\$)	Average Post-RRAP Rent (\$)	Increase \$	%
Less than \$100	2	2	50	72	22	44.0
\$100 to \$199	37	82	134	160	26	19.4
\$200 to \$299	117	314	192	247	55	28.6
\$300 to \$399	74	511	240	338	98	40.8
More than \$400	47	117	312	460	148	47.4
All Cases	277	1 026	216	295	78	36.1

Monthly Rent Group	Average Landlord's Contribution to Rehab Cost	Increase Required to Finance Landlord's Contribution at 10%	at 13%	at 15%
		\$ %	\$ %	\$ %
Less than \$100	4 750	45 90	55 109	62
\$100 to \$199	3 321	32 24	38 24	43
\$200 to \$299	3 441	33 17	40 21	45
\$300 to \$399	3 086	29 12	35 15	40
More than \$400	5 449	52 17	63 20	71
All Cases	3 975	38 18	46 21	52

Source: RRAP Client Surveys 1982
RRAP Administrative Data

1. Required monthly increase based on landlord contribution amortized over 20 years.
2. All figures weighted by the number of units for each landlord.

TABLE 6.16
PERCEPTION OF RENT INCREASES
RRAP TENANTS

Perception	%	N
Very Serious	5.2	13
Somewhat Serious	22.3	56
Not Very Serious	35.5	89
Not Serious at All	37.0	93

Source: RRAP Tenant Survey 1984.

TABLE 6.17
PERCEPTION OF INCREASED MARKET VALUE
HOMEOWNERS AND LANDLORDS

	Incidence %	N	Signif
Landlords	89.3	186	
Homeowners	87.6	926	ns

Source: RRAP Homeowner and Landlord Surveys 1982.

TABLE 6.18
REASONS FOR REHABILITATING-INCIDENCE OF IMPORTANT RATING
HOMEOWNERS AND LANDLORDS

Reason	Incidence of Important Rating		Signif
	Homeowners %	Landlords %	
Improve appearance	78.3	86.4	**
Increase value of dwelling	73.5	72.6	*
Reduce hazards (health, and safety)	85.3	90.6	ns
Increase energy efficiency	89.2	89.3	ns
Conform to municipal regulations	75.0	70.3	*
Reduce maintenance costs	88.7	90.4	ns
Increase living area	67.0	55.8	***

Source: RRAP Homeowner and Landlord Surveys 1982.

1. Rating of 5, 6 or 7 on a seven point scale where 1 = not at all important and 7 = very important.

- *** Significant at the 0.001 level
- ** Significant at the 0.01 level
- * Significant at the 0.05 level

Summary

The calculation of allowable post-RRAP rent increases, based on a 20 year amortization of the landlord's repayable costs, does not appear to impose undue financial burden on landlords. Actual rent increases averaged less than the maximum for the lowest rent units and more than the maximum for the highest rent units. While only one third of the tenants remaining after PRAP perceived their rent increase to be a serious problem, no information was available from tenants who had left since the unit was RRAPed.

Almost 90 per cent of the landlords perceived RRAP to have had a positive impact on the market value of their property. Landlords were no different from homeowners in this regard.

E. Rehabilitation Industry

With the diminishing level of new construction, and its consequent impact on the housing industry, renovation of the existing stock as a replacement for lost opportunities has long been considered. Although only focussing on rehabilitation¹, RRAP has received some attention in this regard. In particular, employment generation has been an implicit objective of the program since its introduction, and the importance of this factor in increasing funding levels and in modifying income limits is consistently referenced in program documentation. In addition, other related considerations have been addressed such as increasing industry stability, promoting the development of new firms, and the training of renovation participants.

Therefore, this section of the evaluation examines the contribution of RRAP to the renovation industry, including direct job creation and leveraging of public funds and the loss of employment opportunities through the use of "sweat equity".

Concern has also developed regarding the capability of the renovation industry to undertake the type of repair required under RRAP. This concern is a reflection of the complex requirements of most renovation work. The renovation industry and technology, both in their infancy, are only now beginning to address these requirements and find acceptable solutions. Thus, it is important to determine whether RRAP has contributed to the establishment of the necessary industry to supply expertise for rehabilitation work -- both in terms of quantity and quality (experience, expertise, skills).

¹ Rehabilitation is a subset of renovation and includes work to upgrade dwellings in need of repair.

The preceding discussion leads to the introduction of two hypotheses which can be tested:

- a) RRAP has been successful in the creation of jobs for the renovation industry; and
- b) RRAP stimulates the demand for specialized renovation contractors.

The base measure of the job creation potential of RRAP was a set of Input-Output models¹ created by Statistics Canada in 1980. These were modified using studies of labour and materials requirements undertaken for new construction (1975) and rehabilitation (1983) and residential renovation expenditures estimates (1980). Federal expenditures for renovation were taken from CMHC monitoring reports. Support for these figures came from a recent report by Clayton Research Associates, "Economic Impacts of Renovation Construction, 1985".

1. Input-Output Models

An input-output model is useful in the derivation of the types of impacts discussed above. Such a model can take an expenditure of a given sum on a given economic activity and translate it into, first, the direct impacts in terms of both labour and other input requirements and, second, the indirect and induced impacts.

The main component of an input-output model is the set of "input structures" for each economic activity covered by the model. An input structure literally splits the original expenditure among all the different inputs which are used in the industry. For construction work, as an example, an expenditure of \$1 million might result in roughly \$270,000 in direct construction wages and salaries; the remaining \$730,000 would be split among the wide variety of other inputs to construction activity such as wood products, cement products, metal products, and profit margins. Each of these units, in turn, has an input structure of its own which involves labour, as well as inputs from other industries and so on.

An input-output model includes a full array of input structures which have been estimated for all industries in the economy. Use of the model allows an analysis to be made of the impacts of any type of activity on the overall economy, as well as on any other specific industry - it also allows one to determine the overall employment and income impacts in any specific industry.

Source: Clayton Research Associates, 1985.

The impact of RRAP on the industry was measured through a distribution of skill requirements and some qualitative data on the organization of the industry and the nature of renovation activity generally. A survey of renovation contractors in Toronto was carried out for the evaluation. Difficulties experienced in identifying smaller RRAP contractors made it difficult to link this data directly to RRAP.

The indirect impact of RRAP on the rehabilitation industry was also measured through the clients' assessment of the availability of qualified contractors and the quality of workmanship, materials and value for money where contractors were involved. This data was taken from the RRAP Client Surveys. In addition, the measures of quality and completeness of repairs and client satisfaction with the program, developed in Chapter IV, will be used to compare the cases where contractors were used with those where they were not used.

Job Creation

Table 6.19 presents an estimation of the job creation impact on the residential construction industry of \$1 million in direct expenditures. This table shows that approximately 15 direct¹ jobs are created through this investment, and that there is little difference between repair activity and new residential construction.

TABLE 6.19

DIRECT JOB CREATION IN THE CONSTRUCTION INDUSTRY - 1980
(FOR \$1 MILLION OF DIRECT EXPENDITURES)

<u>Construction Element</u>	<u>Direct Jobs Created</u>
Repair Construction ⁽¹⁾	14.7
New Residential Construction	14.8

Source: Input-output tables (open and closed), Statistics Canada, 1980.

1. Includes all categories of repair: residential, non-residential, engineering, etc. (finest breakdown available).

¹ Expenditures in the Construction Industry may result in direct jobs in construction, indirect jobs in other sectors and induced jobs as a result of reinvestment of direct and indirect income. This study only deals with direct jobs.

The input-output tables do not differentiate between residential repair and all other forms of repair and as a result do not clearly reflect job creation potential in the residential rehabilitation area. This gap in information contributed to the need to quantify the labour component of residential rehabilitation work.

Table 6.20 reveals the labour intensiveness of rehabilitation work, as about 50 per cent of rehabilitation expenditures are on labour, while the labour portion of new construction expenditures was about half this amount.

TABLE 6.20

LABOUR AND MATERIAL COEFFICIENTS,
RESIDENTIAL CONSTRUCTION COSTS

Component	New ⁽¹⁾ %	RRAP ⁽²⁾ %
Labour	23	50
Materials	66	32
Overhead	11	18
Total Direct Costs	100	100

Source: 1 Labour Requirements for Residential Construction,
Hansen, CMHC, 1975.

2 Labour and Material Requirements for Residential
Rehabilitation, CMHC, 1983.

Using these estimates, for each \$1 million investment in rehabilitation, about 27.8 direct jobs are created¹. This result is similar to the findings of Clayton Research Associates which estimated that 26.5 direct jobs are produced on an expenditure of \$1 million in renovation².

It should be noted that the figures used in establishing labour coefficients were derived from RRAP rehabilitation costs, where most work was undertaken by a contractor,

1 Based upon 1,800 working hours per residential construction year and an hourly \$10 rate. Annual wages equal \$18,000 per residential construction worker.

2 Renovation Construction-Economic Impacts, Clayton Research Associates, 1985 (forthcoming).

partly as a result of the design of the program and of the type of repairs which were carried out (i.e. major system repair and replacement). Overall, over 80 per cent of RRAP clients used a contractor to do the work funded by RRAP. This reinforces the labour intensiveness of rehabilitation work done through RRAP, while the same is not true for all renovation activity.

Table 6.21 shows the proportions of contracted labour and materials and sweat equity materials for renovation and rehabilitation activity in 1980. More than one half of rehabilitation expenditures and almost half of all renovation expenditures in 1980 were for sweat equity activities and correspondingly for materials purchase only. Consistent with the findings on the labour-intensiveness of rehabilitation, the contracted expenditures had a 50 per cent labour content. Overall in 1980, total renovation expenditures yielded about 14 jobs per \$1 million of renovation expenditures. As can be seen, the job

TABLE 6.21

RESIDENTIAL RENOVATION EXPENDITURES 1980				
<u>SWEAT EQUITY AND CONTRACTED LABOUR (\$000'S)</u>				
	Total Expenditures	Contracted Labour ⁽¹⁾ and Materials	Sweat Equity Materials Only ⁽³⁾	Sweat Equity % of Total
Repair	3 186 693	1 480 875	1 705 818	53.5
Alterations ⁽²⁾	2 497 922	1 526 687	971 235	38.9
Total	5 684 615	3 007 562	2 677 053	47.1

Source: The Construction Industry in Canada, 1980, Construction Division, Statistics Canada.

- | | | | |
|---|---|--------------------|------------------|
| 1 | <u>Contracted Labour</u> | | |
| | Homeowners Repairs | 2 067 342 at 47.0% | 971 651 |
| | Tenants Repairs | 87 855 at 0% | - |
| | Landlords Repairs | 707 256 at 72.0% | 509 224 |
| | (see below) | | <u>1 480 875</u> |
| 2 | The proportion of alterations done on contract is estimated to be 66% based on a straight average of the following: 1977 Building Permits, 60%; 1976 FAMEX, 75%; 1978 FAMEX, 62%. | | |
| 3 | Amounts represent materials purchased; no value for labour; assumed to be sweat equity. In addition, adjustments made for under estimation in building permits. | | |

creation impact of renovation with sweat equity is similar to the job creation potential of new construction. Otherwise stated, for renovation or rehabilitation to be more labour intensive than new construction, the work must be contracted-out. This was the case with many recent public programs, for example, the Canada Home Renovation Plan (CHRP), the Canada Oil Substitution Program (COSP) and the Canadian Home Insulation Program (CHIP).

In addition to the labour-intensive nature of RRAP expenditures, additional job creation opportunities are related to the leveraging of private investment as induced by the program. As shown in Table 6.22, the RRAP Homeowner program leveraged, on average, 25 cents for each public dollar spent. Under Rental RRAP, landlords invested an average of \$2.58 for each public dollar. This resulted in a total job creation impact of 34.8 direct jobs in Homeowner RRAP for each \$1 million spent on RRAP and 99.5 direct jobs for a similar Rental RRAP expenditure. As can be seen, the leveraging of private funds greatly increases the direct job creation potential of rehabilitation activity, particularly for Rental RRAP where large sums of private funds were invested.

TABLE 6.22

LEVERAGE OF PRIVATE FUNDS THROUGH
RRAP (1982) FOR EACH RRAP DOLLAR

RRAP Program	Expenditures		Direct Jobs Created/ \$ Million Invested in RRAP
	Public	Private	
Homeowner	\$1.00	\$.25	27.8 jobs X 1.25 = 34.8
Rental	\$1.00	\$ 2.58	27.8 jobs X 3.58 = 99.5

Source: RRAP Administrative Data.

Although the analysis has focussed predominantly on RRAP, the federal government provided assistance for other renovation programs in 1982. Table 6.23 shows the job creation impact of federal programs which by design promoted contractor work and stimulated high levels of private investment. The total federal and leveraged private expenditures resulting from these programs are estimated to have created 32 426 direct jobs. As shown in Table 6.24, all private renovation expenditures, estimated at just under \$6 billion in 1982 would be expected to produce almost 80 000 direct jobs. Public expenditures on renovation, only 20 per cent of the total expenditures, produced roughly one-half the number of jobs.

TABLE 6.23

FEDERAL FINANCIAL INVOLVEMENT IN RENOVATION
AND DIRECT JOBS CREATED ⁽¹⁾ - 1982
(\$ MILLIONS)

Program	FEDERAL		LEVERAGED		TOTAL	
	\$ Millions	Jobs	Factor	Jobs	\$ Millions	Jobs
RRAP - Homeowner	124.9	3 472	.25	868	156.1	4 340
RRAP - Rental	21.3	592	2.58	937	55.0	1 529
CHRP	109.3	3 039	2.97	5 985	324.6	9 024
CHIP	204.4	5 682	.66	3 789	340.7	9 471
COSP	145.0	4 031	1.00	4 031	290.0	8 062
TOTAL	604.9	16 816	N/A	15 610	1 166.4	32 426

Source: RRAP Expenditure Budget 1982; CHRP Monitoring System, June 1982 - May 1983; CHIP Report, 1982; COSP Monitoring System, EMR, 1982.

- ¹ Jobs calculated on the basis of total funds expended and jobs created per \$1 million of expenditures on RRAP.

TABLE 6.24

COMPARISON DIRECT JOBS CREATED BY RENOVATION EXPENDITURES
GENERALLY AND TARGETTED PUBLIC RENOVATION EXPENDITURES

	Expenditures in \$ Millions	Direct Jobs per \$1 Million	Total Direct Jobs
All Renovation	5 684.6	14.0	79 584
Public Renovation Programs	1 166.4	27.8	32 426

Source: Based upon data compiled in previous tables.

The preceding data indicates that RRAP has been an effective vehicle for creating direct jobs in the renovation/rehabilitation industry and that this success is attributable to the design of the program which promotes the use of a contractor and encourages some private investment by the recipient.

Renovation Contractors

Although it is difficult to specifically link RRAP to the growth of the renovation industry, it is reasonable to link the increased demand for both public and private renovation

with the development of specialized renovation skills¹. Contract work in rehabilitation is carried out by specialized contractors with skills specific to this kind of work. Tradesmen can be much more mobile, but the skills and experience required for renovation work are different than those for new construction. Contractors must be able to deal daily with owners and occupants of the dwelling unit. They must be flexible, able to decide on the spot how to proceed and respond to unexpected developments. Knowledge of various forms of construction systems and the ability to spend far more time in management and supervision on the site are also required. Seasonal patterns that still occur in renovation also contribute to the specialization of small firms in this area. Much work can only be done in three seasons of the year and small firms are more flexible in handling this situation.

These required characteristics provide stimulus to the development of firms who specialize in renovation and there is evidence that a professional field is developing. This is confirmed by the development in various cities across the country of "Renovations' Councils" as part of the Canadian Home Builders Association (CHBA). These councils are concerned with improving the image of renovation firms, developing skills and training for the industry, and with consumer concerns such as home warranties for renovation.

There are few constraints to participation of a contractor in the field of renovation and this also contributes to small firms specializing in renovation work. That is, licensing is not required, legal structures are minimal, skill levels are not institutionalized, financial and administrative requirements are kept to a minimum (e.g. a carpenter can easily become a general contractor). The distinction is not always clear between tradesmen and general contractors. The same person can usually perform both functions.

This suggests that the formal organization of the renovation industry has not kept up with the overall growth in renovation. This problem is further exacerbated by the difference in skills which are required in renovation. Table 6.25 shows the distributions of the skills required for new construction and rehabilitation and indicates that more skilled labour is required for rehabilitation work and fewer unskilled workers. Specifically, rehabilitation

¹ Caskie, D., The Toronto Renovators. The Structure of the Industry and the Operation of its Firms, 1983.

requires more carpenters, plumbers and electricians, while labourers and painters are in greater demand in new construction.

TABLE 6.25

LABOUR REQUIREMENTS FOR RESIDENTIAL CONSTRUCTION -
NEW CONSTRUCTION AND REHABILITATION WORK DISTRIBUTION BY TRADE

Trade	New Construction %	Rehabilitation Work %
Equipment Operator	2	-
Labourer	25	16
Carpenter ⁽¹⁾	36	44
Bricklayer	7	2
Plasterer	3	5
Cement Finisher	2	1
Roofer	2	7
Sheet Metal Worker	2	-
Tile Layer	1	2
Painter	11	6
Plumber	5	8
Electrician	4	9
	100	100

Source: New Construction - Labour Requirements for the Residential Construction Industry, CMHC, 1976.
Rehabilitation Work - Labour and Materials Coefficients, CMHC 1983.

- ¹ Carpenters also include metal siding applicators, resilient tile layers and drywall applicators.

Table 6.26 shows the proportion of RRAP clients who experienced problems in finding a contractor to do the RRAP work. One quarter of homeowners who used a contractor reported having some difficulty. Almost one third of landlords reported the same experience. While no difference was found between urban and rural areas, region was a significant influence; however the pattern was not clear. Homeowners had the highest incidence of problems in Ontario, while landlords had the lowest incidence, reflecting the concentration of Rental RRAP in urban areas.

TABLE 6.26

INCIDENCE OF PROBLEMS⁽¹⁾ FINDING
A CONTRACTOR FOR THE RRAP WORK

	HOMEOWNERS (n = 1 035)		LANDLORDS (n = 215)	
	%	Signif	%	Signif
All	10.5	-	11.6	-
Urban Areas	10.9	ns	12.0	N/A
Rural Areas	10.6		N/A ⁽²⁾	
Atlantic	8.3		10.6	
Quebec	9.3		10.5	*
Ontario	16.2	***	3.6	
Prairies	13.3		29.0	
British Columbia	12.1		8.2	

Source: RRAP Homeowner and Landlord Surveys, 1982.

- 1 Rating of 1, 2, or 3 on a seven point scale where 1 = extremely difficult and 7 = extremely easy.
- 2 Number of rural rental cases too small.
- * Chi-square significant at the 0.05 level.

In addition to problems of contractor availability, the complexity of renovation/rehabilitation work and the developing state of the industry might suggest that problems could also occur in the quality of work or the satisfaction of clients. Table 6.27 presents a comparison of several measures of quality and completeness of repairs and client satisfaction with the program for clients who used contractors and for those who did not. No statistically significant differences were observed on any of the quality and completeness measures with the exception of a small difference in overall quality favouring the use of contractors. On the satisfaction measures, the findings are not surprising. Paper work increased where contractors were used resulting in a decrease in satisfaction. Clients were less satisfied with the inspections where no contractors were used, possibly reflecting a more defensive attitude towards work the clients did themselves. Overall satisfaction with RRAP was significantly lower where contractors were used.

TABLE 6.27

INCIDENCE OF STANDARD CONDITION AND SATISFACTION RATINGS
- USED CONTRACTORS/DID NOT USE CONTRACTORS

	Contractors (N=876)	No Contractors (N=208)	Signif
	%	%	
<u>COMPLETENESS VARIABLES</u>			
No Substandard Items	50.0	48.1	ns
No Incomplete Items	54.5	54.0	ns
No Substandard Items On:			
Health Index	67.9	68.7	ns
Safety Index	45.0	39.9	ns
Useful Life Index	61.1	55.4	ns
<u>QUALITY VARIABLES</u>			
Workmanship/Materials	85.0	85.4	ns
Maintenance	96.7	94.1	ns
Overall Dwelling Condition	97.9	95.0	*
<u>SATISFACTION VARIABLES</u>			
Helpfulness of Agent	82.9	79.6	ns
Helpfulness of Inspector	76.7	70.6	*
Speed in Processing	82.1	79.6	ns
Paperwork	74.7	81.0	*
Overall Satisfaction with RRAP	81.8	90.1	**

Source: RRAP Physical Inspections 1982
 RRAP Client Surveys 1982

1. RRAP Homeowners from current (1981) sample only.

** T significant at the 0.01 level

* T significant at the 0.05 level

Summary

In general, expenditures on renovation and new residential construction have the same impact on the creation of direct jobs. However, it has been estimated that about half of all renovation construction is undertaken by the homeowner, thus severely reducing the job creation impact. Where renovation work is contracted out, the job creation potential (27.8 direct jobs/\$1 million expenditure) is almost double that of new residential construction (14.8 direct jobs/\$1 million expenditure).

RRAP and other federal renovation programs have either promoted or by design required contractor work. The design of RRAP, although not as effectively as other federal programs, has leveraged private funds in addition to the federal funds, thus further increasing its direct job creation impact. For each federal dollar of homeowner assistance provided, an additional \$.25 is invested by the homeowner. For rental RRAP, landlords invest, on average, \$2.58 for each federal dollar.

The renovation industry is in its infancy in terms of organization, training and technology. The growing focus upon renovation is a result of the rapid growth in demand, a leveling-off of new construction activity, and the demands for a different mix of skills and experience in an industry which operates, through necessity, primarily on a small scale. It is not surprising that up to one quarter of RRAP clients experienced difficulty in locating contractors for their RRAP work. However, quality of the work and satisfaction with the contractor was high.

F. Relationship With Other Programs

RRAP is not the only program which provides assistance to homeowners and landlords undertaking rehabilitation work on their dwelling. Housing renovation is supported by all three levels of government. Programs are offered which support repair, improvement, energy conservation, heating system conversion, heritage preservation, additions, conversions and demolitions.

Federal agencies offer support for rehabilitation (RRAP), energy conservation (CHIP), heating system conversion (COSP) and heritage preservation (Heritage Canada). Provinces offer programs which provide additional assistance on top of federal programs or which assist those not eligible for federal support. Municipalities deal directly with renovators as delivery agents for federal and provincial programs, through programs of their own and through the

implementation and enforcement of by-laws governing health and safety, building permits, zoning, assessment and taxation.

The relationships between these programs and RRAP varies. Some are complementary, for example, provincial programs stacking assistance on RRAP, municipal delivery of RRAP and Maintenance and Occupancy By-Law enforcement. Some, however, are not complementary, such as programs which cannot be stacked with RRAP, use different standards or support different activities such as conversions or improvements. Table 6.28 contains a list of federal and provincial residential renovation and energy conservation programs which have operated during the existence of RRAP.

The impact of the use of other programs on the effectiveness of RRAP can be assessed by comparing the achievement of the program objectives where other programs have been used and where RRAP alone was used. Thus, the following hypothesis can be tested:

RRAP is more effective when other programs are used.

RRAP clients, who have used other programs as well, are identified through the RRAP client surveys¹. The specific program is specified for CHIP, COSP and CHRP, while only the program type is provided for provincial and municipal programs. The measures of dwelling condition and client satisfaction developed for the analysis of objectives achievement will be used. The takeup by special needs groups, the disabled, senior citizens and low income families, will be compared. In addition, several characteristics of the loans, total cost of work, total loan, total forgiveness, will be compared.

Table 6.29 shows the use of other programs by RRAP clients. Just under one half of clients used some other program in addition to RRAP. The federal energy programs were the most frequently used. This is primarily due to their universal availability, although some eligibility requirements do apply. Provincial and municipal programs were used by a smaller proportion of RRAP recipients, although the use was greater by landlords. This is largely due to the use of Loginove with rental RRAP in Quebec.

¹ The surveys asked if any other programs were used to do work on the dwelling in the last five years. There is no way to determine the exact timing of the use of the other program with respect to the use of RRAP.

TABLE 6.28
FEDERAL AND PROVINCIAL RESIDENTIAL REHABILITATION
AND ENERGY CONSERVATION PROGRAMS - 1974 - 1984

Federal	
Canadian Home Insulation Program	1977-1985
Canada Oil Substitution Plan	1980-
ENERSAVE	1977-
Canadian Home Renovation Plan	1982-1983
NHA Home Improvement Loan Program	1955-
Newfoundland	
RRAP Loan Assistance	1978-
Prince Edward Island	
Home Improvement Assistance Program	1969-1980
Essential Home Repair Program	1976-1981
Social Rehabilitation Program	1977-
Seniors' Home Repair Program	1980-
Helping Hands for Seniors	1982-
Nova Scotia	
Home Insulation and Conversion Loan	1977-
Provincial Housing Emergency Repair Program	1977-
Senior Citizens' Assistance Program	1979-
Small Loans Assistance Program	1979-
Apartment Conversion Program	1979-1981
Access-a-Home	1981
Home Energy Analysis Trial	1983-
New Brunswick	
Home Improvement Loans (JRRAP)	1972-
Home Wiring Improvement Program	1972-
Home Energy Conservation Loan	1977-1984
Quebec	
Montreal Rehabilitation Program	1969-1973
SHQ - Municipal Residential Rehabilitation	1973-1982
Loginove	1982-
Home Insulation Program	1978-1981
ENERGAIN	1981-
EQUERRE Encouragement Québécois à la	
Restauration Résidentielle	1984-
Dual Energy Heating Systems Grant	1982-1984
Garantie Renovation	1984-
Ontario	
Ontario Home Renewal Program (OHRP)	1974-
Residential Energy Advisory Program (REAP)	1981-
Ontario Rental Construction Loan	1981-
Renthab	1982
Heatsave	1980-
Renoloan	1984-
Manitoba	
Pensioners' Housing Program	1971-1974
Critical Home Repair Program	1975-
Homeowners' Insulation Loan Program	1977-1983
Cut Home Energy Costs (CHEC)	1983-1985
Pensioners' Painting Program	1977-1978
Core Area Home Repair Program	1981-
Buy and Renovate	1982-
Saskatchewan	
Home Improvement Grant (Northern Sask.)	1976-1979
Social Services Housing Grant (North. Sask.)	1969-1982
Residential Rehabilitation Program	1973-
Senior Citizens' Home Repair Program	1973-
Warm-up Saskatchewan	1978-1984
ENERWISE	1984-
Home Modification for the Disabled	1981
Alberta	
Senior Citizens Home Improvement Program	1976-1979
Alberta Pioneers' Repair Program	1979-1983
Seniors' Home Improvement Program	1983-
Rural Home Assistance Program	1977-
Home Adaptation Program	1978-
Alberta Home Conversion Program	1980-
CHAP Retrofit Training Program	1983-
British Columbia	
Home Conversion Loan Program	1974-
Home Insulation Program	1977-

Source: Inventory of Residential Rehabilitation and Energy Conservation Programs, Program Evaluation Division, 1984.

TABLE 6.29
INCIDENCE OF USE OF OTHER PROGRAMS WITH RRAP¹
BY PROGRAM, CANADA

	HOMEOWNERS			LANDLORDS		
	N	% of Total	% of Stacked	N	% of Total	% of Stacked
RRAP + Other	616	48	100	120	42	100
RRAP Only	664	52	n/a	165	58	n/a
RRAP + CHIP	460	36	75	66	23	55
RRAP + COSP	125	10	20	33	12	28
RRAP + CHRP	107	8	17	27	9	23
RRAP + PROV	76	6	12	30	11	25
RRAP + MUN	28	2	5	21	7	18

Source: RRAP Client Surveys 1982

¹ Current (1981) and historical (1976-79) samples.

An examination of the use of other programs by province reveals that significant differences exist between provinces. This could be expected from the number and type of programs offered. Table 6.30 shows the takeup of other programs by program type and province.

The achievement of the program objectives was compared for RRAP only and RRAP plus other groups using the series of measures which have been used in other sections of the analysis. Table 6.31 shows the results for each group on each measure, for Homeowner and Rental RRAP cases. In terms of completeness, the cases where other programs were used fared significantly better for rental units. No significant difference was observed for homeowner units, except on the useful life index. Interestingly, there was no difference in the incidence of incomplete items between the two groups which further supports the finding that incompleteness was not related to the ability to pay. No significant differences were observed for any quality variables.

On the measures of client satisfaction, the only significant differences were found for homeowner satisfaction with the agents and inspectors. On these measures, clients who had also used other programs were more satisfied than clients who had only used RRAP.

TABLE 6.30
USE OF OTHER PROGRAMS BY RRAP CLIENTS¹
INCIDENCE BY PROVINCE, BY PROGRAM

Homeowners	ANY %	CHIP %	COSP %	CHRP %	PROV %	MUN %	TOTAL N
NFLD	56.9	54.0	12.1	2.3	0.0	0.0	69
PEI	39.5	29.9	18.4	6.0	0.0	1.0	62
NS	34.8	24.5	8.8	5.8	1.5	3.8	131
NB	44.5	28.0	7.8	9.8	13.1	1.7	168
QUE	58.2	41.6	13.7	14.9	5.2	4.1	386
ONT	37.9	30.9	5.0	4.4	3.8	1.5	85
MAN	48.0	31.6	8.0	7.7	10.0	0.0	36
SASK	60.2	46.9	3.2	7.5	11.3	1.6	67
ALTA	51.4	41.0	1.0	6.0	18.3	2.1	88
BC	38.5	31.6	9.2	2.1	1.0	0.0	190
Landlords	ANY %	CHIP %	COSP %	CHRP %	PROV %	MUN %	TOTAL N
NFLD	56.3	56.3	42.2	0.0	0.0	0.0	6
PEI	46.9	46.9	8.1	19.4	0.0	0.0	8
NS	60.0	40.0	6.7	0.0	26.7	0.0	13
NB	35.7	32.5	16.1	6.4	0.0	0.0	27
QUE	47.1	13.2	10.2	15.0	19.4	15.8	132
ONT	42.1	32.1	15.0	5.2	1.2	0.0	53
MAN	10.5	10.5	0.0	0.0	0.0	0.0	5
SASK	53.2	53.2	0.0	0.0	0.0	0.0	5
ALTA	27.3	27.3	0.0	4.6	0.0	0.0	21
BC	12.3	12.3	0.0	0.0	0.0	0.0	14

Source: RRAP Client Surveys 1982

¹ Current (1981) and historical (1970-79) samples.

TABLE 6.31

INCIDENCE OF STANDARD CONDITION AND CLIENT SATISFACTION RATINGS-
RRAP ONLY/RRAP PLUS OTHER PROGRAMS

	HOMEOWNER			RENTAL		
	RRAP Only %	RRAP Plus Others %	Sig.	RRAP Only %	RRAP Plus Others %	Sig.
COMPLETENESS VARIABLES	(N=699)	(N=585)		(N=171)	(N=116)	
No Substandard Items	47.1	50.6	ns	55.5	67.4	*
No Incomplete Items	61.9	59.9	ns	77.7	74.3	ns
No Substandard Items On:						
Health Index	67.5	67.6	ns	68.0	74.3	*
Safety Index	42.5	42.8	ns	42.6	60.2	**
Useful Life Index	56.4	62.3	*	65.2	74.0	ns
QUALITY VARIABLES						
Workmanship/Materials	85.6	85.1	ns	84.7	86.6	ns
Maintenance	95.8	97.1	ns	92.0	96.6	ns
Overall Dwelling Condition	96.3	97.4	ns	98.2	98.6	ns
SATISFACTION VARIABLES						
Helpfulness of Agent	78.2	82.5	*	86.5	83.4	ns
Helpfulness of Inspector	71.6	76.7	*	81.0	79.9	ns
Speed in Processing	79.0	81.5	ns	81.7	73.7	ns
Overall Satisfaction	81.3	81.8	ns	81.8	78.0	ns

Source: RRAP Physical Inspections 1982
RRAP Client Surveys 1982

1. Homeowner clients from the current (1981) sample only.
2. Descriptions of the measures are found in Appendix 2.
3. Chi-square: ** significant at the 0.01 level
* significant at the 0.05 level

This lack of significant differences where other programs have been used in addition to RRAP can be explained, in part, by looking at the type of activity and assistance they provide. CHIP supports the upgrading of insulation and weatherproofing and is expected to result in energy consumption reductions and cost savings to the property owner. However, the work is largely hidden and is not necessarily associated with the improvement of the dwelling

condition. Similarly, furnace conversions from oil fuel would have no effect on the condition of the rest of the dwelling. In some cases, energy conservation actions can contribute to moisture-related problems which can lead to structural and surface deterioration.

Renovation carried out under CHRP, which permitted almost any type of work, could be expected to contribute to client satisfaction, as the property owner could do whatever they wished, but may not contribute to dwelling condition, as no quality standards or inspections were required.

Provincial and municipal programs may also not contribute to improved dwelling condition. Many are energy-related and would therefore have a similar impact on dwelling condition as CHIP and COSP. Others, which provide additional assistance to households in need, for example, seniors, the disabled and low income families, may have a positive impact if the assistance is used to do necessary repair work. For example, the provincial Loginove program in Quebec is directly linked to RRAP and provides additional assistance to undertake needed repairs. Provincial programs which provide assistance to finance the repayable portion of a RRAP loan exist in New Brunswick and, until 1984, in Newfoundland.

Stacking does not appear to have a significant impact on dwelling condition, completeness and client satisfaction. However, some improvement is seen on completeness measures for rental units and satisfaction measures for homeowner units.

In order to determine if RRAP is more effective in targetting assistance to special needs groups when other programs are used, the incidence of these groups was examined. Table 6.32 shows the incidence of disabled, senior citizens and low income households where RRAP was used alone and where other programs were used as well.

No statistically significant difference in incidence of households with disabled or senior citizen members was observed. However, the incidence of low-income-households was over 15 percentage points less where other programs were used.

This finding is due, once again, to the nature of the other programs themselves. Programs which only provide partial assistance for additional work, for example, CHIP and COSP, require a contribution from the property owner. This in turn requires a higher income in order to be able to make this contribution. On the other hand, programs which

TABLE 6.32

INCIDENCE OF SPECIAL NEEDS GROUPS -
RRAP ONLY/RRAP PLUS OTHER PROGRAMS¹

Group	RRAP Only %	RRAP Plus Others %	Signif ³
Disabled Family Member	3.4	2.3	ns
Senior Citizen Family Member	30.9	27.9	ns
Low Income Household ²	76.1	59.6	***

Source: RRAP Homeowner Survey 1982

1. Current (1981) sample only.
2. Household income less than \$13 000.
3. Chi-square *** significant at the 0.001 level.

provide additional subsidy assistance, such as grants or interest reductions, make it easy for lower income households to apply.

This can be clearly seen by looking at the average income figures by program type. As shown in Table 6.33, the average income amount is higher for CHIP, COSP and CHRP, all partial assistance type programs, and lower for provincial programs, primarily additional subsidy and low interest loan programs.

TABLE 6.33
AVERAGE HOUSEHOLD INCOME
HOMEOWNERS, BY PROGRAM

	Income (\$)
All RRAP Recipients	11 458
RRAP Only	11 788
RRAP + CHIP	12 164
RRAP + COSP	14 872
RRAP + Provincial	10 025
RRAP + Municipal	12 449

Source: RRAP Client Survey 1982

Other programs which provide additional subsidy assistance permitting additional work to be done or reducing the owner's contribution under RRAP are more effective in assisting special needs groups. Only provincial programs result in lower household income. Generally, energy conservation programs allow additional work to be done but can only be used by households with higher incomes.

Summary

RRAP permits and, in fact, encourages the use of other assistance programs in addition to RRAP. On the surface this appears to be a very useful and beneficial course of action for RRAP recipients. One-half of all clients used some other program in addition to RRAP. However there are several factors which will determine whether a RRAP client can and will take advantage of other programs, notably, how much more it will cost to obtain the extra assistance.

For many provincial and municipal programs the additional assistance is virtually free. Stacking provides a subsidy towards the repayable portion of the RRAP loan, if any, or covers the cost of additional work beyond RRAP. For those least likely to be able to afford additional personal expenditures, this is the only way they can utilize a stacking option.

Other programs, such as CHIP, COSP and many provincial energy-related programs (and others), provide only a portion, usually one-half, of the cost of additional work. As has been shown, a higher household income is necessary in order to take advantage of these matching funds. Since the majority of RRAP recipients have low incomes and have received full forgiveness, their ability to provide an additional contribution is limited.

On measures of dwelling condition, completeness and client satisfaction, few differences between RRAP only and RRAP plus other program cases were observed. Similarly, for special needs groups, RRAP alone reached a significantly higher proportion of households with incomes below \$13,000.

G. Energy Conservation

The National Energy Program, announced by the federal government in 1980, inaugurated a concerted effort to reduce the consumption of energy in Canada. One of the areas targetted for attention was domestic space heating energy consumption. Two major objectives were established; conversion from oil to alternative fuels for home heating and improved home insulation and weatherization to reduce

energy requirements for space heating. Two federal government programs were introduced as direct responses to these objectives. The Canadian Home Insulation Program (CHIP) to assist in the upgrading of energy efficiency and the Canada Oil Substitution Program (COSP) to assist in the conversion from oil fueled residential heating.

While RRAP has no specific energy conservation objectives, many energy-related activities are eligible for inclusion and funding under the program. Improvements "affecting the thermal efficiency of a dwelling" are considered priority repairs in the RRAP manual although they are not mandatory items. Additionally, the homeowner is encouraged to take advantage of the other energy programs, if eligible, at the same time as RRAP.

All provinces provide supplementary or complementary programs which assist homeowners with energy-related work. Some provide only information, some loans at reduced interest rates and some grants. All can be used in conjunction with the federal energy programs.

To assess the impact of RRAP on residential energy conservation, the following hypothesis can be tested:

RRAP contributes to the improvement of energy efficiency by supporting energy conserving activities.

Three criteria can be established to assess the impact of RRAP on achieving or encouraging energy conservation objectives. First, for RRAP to contribute to energy conservation the program must be used to undertake work which improves the energy efficiency of dwellings. Energy conserving activities include upgrading insulation, door and window replacement or sealing, heating system replacement or conversion from oil to gas. To the extent that such activities have been demonstrated to reduce energy consumption, their conduct under RRAP would be consistent with overall energy conservation objectives.

Second, a measure of the effectiveness of these energy-related rehabilitation activities can be obtained from the physical inspections of the RRAPed dwellings. Specifically, the quality of these energy-related items must be above minimum standards. Ideally these features should be of higher quality where RRAP has been used, but this cannot be fully determined due to the lack of a control group of dwellings.

Third, an indirect effect of RRAP may be an increased awareness of energy conservation by the occupants. Evidence of this would include energy conservation improvements to the dwellings made after RRAP, as discussed above, as well as energy conserving occupant practices. Practices such as lowering thermostat settings (and additional night-time setbacks), properly maintained heating systems and controlled ventilation have been shown to produce demonstrated energy savings. RRAP provides opportunities for owners to obtain information on the benefits and methods of conserving energy, through consultations with inspectors, delivery agents and contractors. The program would be supporting energy conservation if the energy practices of RRAP recipients have improved or are more energy efficient than those of other occupants.

The RRAP Administrative Data contains a record of the type of work funded by the program. The RRAP Client Survey provides a more detailed record of the rehabilitation history of the dwellings in the sample including work funded by RRAP and other work undertaken before and after RRAP. Specific energy related work includes insulation and weatherproofing, repair or replacement of windows and doors and repair or replacement of the primary heating system¹.

The use of other government assistance programs is required where applicable and only the costs not covered by these programs are eligible for RRAP. Energy efficiency is encouraged as is the conversion from oil to alternative fuel sources.

¹ Insulation and weatherproofing includes the addition or upgrading of the insulation package and sealing, caulking or weatherstripping to reduce air movement through the building envelope. Only costs not eligible under the Canadian Home Insulation Program are eligible for funding under RRAP. Replacing doors and windows is eligible under RRAP to conform to light, ventilation and access requirements and where the existing units are beyond repair. Partial replacements or repair of frames, glazing and screens is permitted where full replacement is not warranted. Owners are encouraged to provide storm windows, double glazing and caulking on all windows and to weatherstrip all operable windows and exterior doors. Repair or replacement of the primary heating system and heat distribution system are eligible under RRAP to provide safe and reliable space heating.

Energy consumption and heating cost reductions resulting from these activities depend on many factors such as original conditions and efficiency, total heating requirements, energy costs and quality of the work. Before and after energy consumption and cost measures are not available for the inspected dwellings and therefore no consumption or cost-effectiveness calculations can be done. However, quality work in these energy-related areas can be expected to produce some energy consumption reductions.

Measures of the quality of energy related features can be derived from the physical inspections (trained inspectors' assessment). The Client Survey contains some indications of the occupants' attitudes towards energy conservation and their energy practices such as thermostat settings and heating system maintenance. Due to the absence of pre-RRAP data, no strong conclusions can be drawn concerning the impact of the program on these practices. In the absence of a non-RRAP control group, the attitudes and practices of those who did energy work with RRAP were compared with those who did the work without RRAP and with those who did not do energy work.

Energy conservation activities have a high priority both for homeowners and landlords. RRAP clients rated maintenance, safety and energy efficiency as the three most important reasons for undertaking rehabilitation work. Less important reasons included appearance, investment, code compliance, additional space and accessibility for the disabled. As shown in Table 6.34, both homeowner and landlord recipients ranked these three reasons in the same order.

This perception of rehabilitation is reflected in the type of work undertaken by RRAP clients, both before or after RRAP. It is important to consider that energy efficiency is not, in itself, a qualifying activity for RRAP assistance, although clients are encouraged to consider energy conservation and to take advantage of other government programs which provide assistance for these activities. The amount of energy-related work undertaken by RRAP recipients further reinforces the high priority given to energy-related activities.

TABLE 6.34
REASONS FOR DOING REHABILITATION WORK
- INCIDENCE OF IMPORTANT RATING¹

Reason	Homeowners		Landlords	
	%	Total N	%	Total N
Less Costly Maintenance	90.4	1 116	89.6	277
Health and Safety	90.3	1 121	89.2	283
Energy Efficiency	89.4	1 114	88.8	270
Inside Appearance	86.7	1 109	85.6	278
Outer Appearance	86.4	1 124	81.4	279
Increase Value	73.1	1 080	76.9	276
Regulations	70.3	1 033	71.6	262
Increase Living Area	35.6	956	49.5	241
Disabled Access	36.8	855	41.9	235

Source: RRAP Client Surveys, 1982

1. Important rating is a rating of 5, 6 or 7 on a seven point scale where 1 = extremely unimportant and 7 = extremely important.

Table 6.35 shows the incidence and timing of energy related work done by RRAP recipients. Over 85 per cent of homeowner and landlord recipients had done some energy related work. Two-thirds of homeowners and 70 per cent of landlords did this energy related work with RRAP.

TABLE 6.35
INCIDENCE OF ENERGY RELATED WORK¹ UNDERTAKEN BY RRAP
RECIPIENTS

	Homeowners (N=1 284)	Landlords (N=28)
Yes - With RRAP	65.4	71.9
Yes - Not RRAP	21.2	15.8
No - Never	13.4	12.3

Source: RRAP Clients Surveys, 1982

1. Energy related work includes work to windows and doors, insulation or heating system.

As shown in Table 6.36, over two thirds of the homeowners replaced or repaired windows and doors with RRAP. This was the most common of all work activities undertaken under the program. Insulation and weatherproofing activities were undertaken by 60 per cent of the homeowners. One third replaced their primary heating system, a much more expensive rehabilitation activity, and less common under RRAP.

For landlords, over three quarters replaced or repaired windows (most common activity) and 70 per cent did insulation and weatherproofing work. The primary heating system was replaced by half of the landlords, although an expensive activity in a multi-unit building, one which can result in significant operating cost reductions.

TABLE 6.36
INCIDENCE OF ENERGY WORK UNDERTAKEN BY TYPE OF WORK

	% of RRAP Cases Doing Work				% of Work Done By RRAP			
	Homeowners		Landlords		Homeowners		Landlords	
	%	N	%	N	%	N	%	N
Any	86	1 313	88	318	75	990	80	253
Insulation	60	910	70	250	76	687	80	199
Windows	68	1 041	78	282	79	825	83	236
Heating System	33	505	50	181	78	394	79	144

Source: RRAP Client Surveys, 1982

The table also shows that RRAP accounted for the majority of all energy-related work undertaken by the client homeowners and landlords within the five preceeding years. Over 75 per cent of the energy work was carried out with RRAP. More energy work was done after RRAP than before; however, this is more related to the introduction of the federal energy programs, rising fuel prices and an increasing awareness of energy conservation during the 1980's.

The impact of RRAP was greater for window and door work, the activity which is less likely to be funded by other energy conservation assistance programs. This is more clearly a rehabilitation activity that has energy conservation benefits but would not likely be done for energy conservation purposes only. The availability of other assistance programs specifically designed to assist with insulation upgrading (CHIP) and heating system conversion (COSP) accounts for the reduced importance of RRAP for these activities.

As reported in Section VI.F of this report, 48 per cent of homeowner and 38 per cent of landlord recipients took advantage of these programs in addition to RRAP. The majority of these were for CHIP, the federal insulation and weatherizing program.

A measure of effectiveness of the energy conservation work undertaken with RRAP can be obtained by examining the quality of energy features in the inspected RRAPed dwellings. Since no direct comparison of energy costs before and after RRAP is available, it must be assumed that if the quality is low, energy efficiency will also be low.

The quality of the energy features where work had been undertaken with RRAP was compared to that where work was done without RRAP and where no energy-related work had been done. Ratings from the physical inspections were derived from a number of specific items for each work category. Insulation includes ratings for basement and attic insulation. Windows and doors includes individual ratings of the condition of sash, sill and frame, glazing, fit, caulking and weatherstripping and storm doors and windows. Primary heating system includes ratings of both the furnace and the primary heat distribution system.

Table 6.37 shows the incidence of standard quality ratings for energy-related components of the dwellings. Dwellings where energy work had been done with RRAP fared significantly better than other dwellings on this measure. For homeowner units, 66.4 per cent had no substandard energy features where work was done with RRAP, compared to 61.6 per cent where no work was done and 58.2 per cent where work was done without RRAP. For rental units, where RRAP was used 81 per cent received a standard rating. The other two groups were significantly worse on this measure. The composite measure is quite a stringent measure of the quality of energy features of the dwelling. In fact, over 90 per cent of all units had two or fewer substandard items.

The inspectors also rated the quality of workmanship and appropriateness of materials used for work undertaken through RRAP. Examination of these ratings for the energy-related activities provides a measure of the quality of the work directly assisted by RRAP.

TABLE 6.37
INCIDENCE OF STANDARD COMPOSITE ENERGY FEATURES RATING¹

Energy Work Done	Homeowners (N=1 284)		Landlords (N=286)	
	%	Signif.	%	Signif.
Yes - With RRAP	66.4		81.0	
Yes - Not RRAP	58.2		61.8	
No - Never	61.6	*	52.2	***
All Units	64.0		74.4	

Source: RRAP Client Surveys, 1982
RRAP Physical Inspections, 1982

- *** Significant at the 0.001 level
- * Significant at the 0.05 level

- 1 Composite Energy Features rating includes the basement and attic insulation, window and door condition, fit, weatherstripping and furnace and heat distribution system. A standard rating is the absence of any substandard feature.

The overall quality of workmanship and appropriateness of materials used for work done under RRAP was rated highly by the inspectors for almost all dwelling components. For energy-related features the incidence of substandard ratings is shown in Table 6.38.

These measures, quality of the components, workmanship and materials, support the conclusion that energy-related work carried out with RRAP is of high quality and could contribute to energy efficiency. The role that RRAP plays is in increasing the amount of work which gets done and enabling owners to include energy conservation considerations in the process of undertaking necessary repairs.

Exposure to the RRAP process brings homeowners into contact with a variety of professionals in the housing renovation and energy conservation fields. These include the RRAP delivery agent and inspector, contractors, buildings product agents and possibly municipal building inspectors and permit officials. Whether energy-related work is carried out or not with RRAP, either directly to insulation, heating or window and door systems, or indirectly, in the course of structural repairs and finishing work, the occupant is likely to become aware of potential energy conservation actions.

TABLE 6.38
ENERGY-RELATED WORK UNDER RRAP
- QUALITY OF WORKMANSHIP AND APPROPRIATENESS OF MATERIALS

Item	Quality of Workmanship & Substandard		Appropriateness of Materials & Substandard	
	Homeowner	Rental	Homeowner	Rental
Furnace	2.9	0.0	0.8	0.0
Heat Distribution System	0.7	0.0	0.7	0.0
Overall Ext. Windows/Doors	1.9	1.6	0.3	0.0
Exterior Doors	2.7	0.0	0.4	0.0
Exterior Windows	1.4	1.0	0.5	0.0
Attic Soffits & Ventilation	3.5	4.0	0.2	0.0
Insulation	2.4	4.2	0.0	4.2

Source: RRAP Physical Inspections, 1982

Notes: 1. Substandard - Quality of Workmanship is a rating of 1, 2 or 3 on a 7 point scale (1=terrible workmanship, 7=top workmanship).

2. Substandard - Appropriateness of Materials is a rating of totally inappropriate on a 3 point scale (totally inappropriate, adequate but not ideal, totally appropriate).

An index of energy practices was created from the responses to the client survey on a number of energy-related occupant practices. The ratings are useful in comparing sub-groups within the RRAP sample but do not permit comparisons beyond the RRAP recipients. The index is an additive rating of five energy-related questions answered by the occupant¹. Incidence and mean values are shown in Table 6.39 for homeowners who did any energy work with RRAP and those who did not.

¹ The five components of the index are:

- i) Heating system servicing (or electric heat)
- ii) Thermostatic space-heating control
- iii) Daytime temperature setting and night set back
- iv) Self-rating of energy conservation awareness
- v) Occupant rating of dwelling energy efficiency

TABLE 6.39
ENERGY PRACTICES RATINGS
ENERGY WORK DONE WITH RRAP - HOMEOWNERS

Rating	Historical		Current		All	
	No (N=113) %	Yes (N=173) %	No (N=422) %	Yes (N=818) %	No (N=535) %	Yes (N=990) %
0	2	1	2	2	2	1
1+	3	3	7	4	6	4
2++	28	11	18	13	20	13
3+++	32	29	27	29	28	29
4++++	23	40	30	33	29	34
5+++++	12	16	16	19	15	18
Mean	3.0	3.5 **	3.2	3.5***	3.2	3.4***

Source: RRAP Homeowner Survey, 1982

T test difference of means ** significant at the 0.01 level.
*** significant at the 0.001 level.

In all groups, clients who did energy work with RRAP scored higher on the energy practices rating than those who did not do energy work with RRAP. All reported, on average, just over three of the energy conserving practices. No large difference existed between clients in the historical and current samples. Those who did energy work scored the same while those who did not rated higher in the current sample. This suggests that in recent years, many clients may have already done some energy work using the federal energy programs and have used RRAP to do additional repair work. The historical sample clients were more likely to be doing energy work for the first time at the time of their participation in RRAP.

Summary

RRAP has had a strong impact on the undertaking of energy-related work, both singly and in concert with other energy conservation assistance programs. The impact of RRAP has been greatest for work to windows and doors (replacement, repair, weatherproofing) for which no other assistance programs exist. Over three-quarters of all energy related work done by RRAP homeowner and landlord recipients was funded through the program. The role of RRAP is likely to become more important for insulation and heating system work as the two federal energy conservation assistance programs, CHIP and CHOSP, are phased out by 1986.

Energy features in dwellings where energy work was funded by RRAP were rated by inspectors as being in better condition than where work was done by other means or not at all. The difference was greater and the RRAP energy work of higher quality in rental RRAP units. Few problems of poor workmanship or inappropriate materials were found for energy work done through RRAP. Again, rental RRAP units fared better than homeowner units.

RRAP clients who did energy work through RRAP rated higher on a measure of energy practices than clients who did not do energy work. The role of RRAP as an energy conservation information source will become more important as the federal energy conservation programs are phased out.

VII. ALTERNATIVES

In the preceeding chapters of the evaluation, the rationale for the program, the achievement of the objectives of the program, the impact of a number of design and delivery features of the program and the intended and unintended impacts and effects of the program have been examined. The analysis has identified some aspects or elements of the program which work well and some which could be improved to be more effective or efficient. These may result from inappropriate or poorly implemented procedures or from a lack of appropriate procedures or mechanisms.

In light of these findings, there exist a variety of approaches to enhancing the efficiency and effectiveness of the program. Some suggest only minor modifications to program operating parameters or procedures. Others suggest a more major revision or implementation of new procedures. In many cases, a number of alternative approaches could be employed to deal with the identified problem.

Three dominant themes have emerged from the evaluation which will be stressed in the examination of alternatives. First, greater efficiency is dictated by the long term, on-going nature of the rehabilitation needs of the existing stock. This must be reflected in the search for economical uses of existing resources and other means of increasing the government's ability to provide rehabilitation assistance.

Second, a significant part of these efficiency measures pertain to the effective targetting of RRAP resources to households in need of assistance. This requires that the provision of assistance be based on need; both the physical need for rehabilitation of the dwelling and the household's need for assistance in undertaking the work.

Third, all households defined to be in need of assistance should be offered equitable access to the benefits of the program. This implies that, where possible and reasonable, households outside designated areas be eligible for assistance.

In this chapter a number of alternative approaches to enhancing the effectiveness and efficiency of the program will be examined. The major findings of the evaluation will be identified and alternative approaches which are suggested by these findings will be described. The intent is to introduce potential modifications for consideration towards the improvement of the program.

A. Homeowner RRAP

1. Targetting

Generally, homeowner RRAP was found to be well targetted to lower income households. The analysis showed that RRAP homeowner recipients, on average, had lower incomes, higher gross debt service ratios, and less accumulated equity in their dwelling than the general population of households living in dwellings in need of major repairs. However, the analysis did reveal that the lowest income households, those below the poverty threshold, were not as well served as their general population counterparts.

There are two explanations for the inability of the program to serve the lowest income homeowners. The first is that these homeowners are being displaced as RRAP recipients by other applicants who are more aware, more accessible or more receptive to the program. Such a situation would suggest the need for measures to more clearly target the program to the lowest income households. The second explanation is that the lowest income households are unable to take advantage of the program because the program design makes it impossible or impractical for them to participate. They either do not apply, are rejected or cancel at some point during the delivery process.

While the program objectives (urban) do not prioritize the target population there is some justification for addressing the needs of the lowest income households first. Several means of formally prioritizing delivery to serve the lowest income households first are possible. Implementing a priority system on delivery would require that some formula be established for rating applicants. Because the lowest income may not necessarily represent the greatest need, income should not be the sole criteria. Gross debt service ratio, equity in the dwelling, amount of repairs needed would have to be considered. Administering such a scheme would require additional work for delivery agents to classify, rate and prioritize applicants. Would all low income households have to be served first, before any higher income households became eligible? This would be difficult, if impossible to administer. An alternative would be for the delivery agents to prioritize applications on hand at regular intervals.

It is not inconsistent with the program objectives to provide decreasing assistance to higher income

households as is currently the case. To ensure that all resources (even repayable loans) go to households in need, the upper income limit (limit of any forgiveness) could become a cutoff for participation. Beyond this income a household would not be eligible for participation in the program. This would likely not produce a significant change as only 2 per cent of the RRAP homeowner loans since 1983 were made to applicants with incomes above the upper limit.

The income limits, as defined by the program, are the vehicle for determining the amount and type of assistance which is available to an applicant. The evaluation revealed that nationally the limits identify the lower two-fifths of the population of households living in dwellings in need of major repair; the lower fifth for full forgiveness and the second fifth for decreasing forgiveness. However, the limits do not provide equal access to the benefits of the program on a regional basis. The difference is so great that, for example, in Ontario only 38 per cent of the population is eligible for any assistance while in the Atlantic, the same proportion, 37 per cent, is eligible for full-forgiveness.

An alternative to one set of income limits would be a set of regional or local market limits which take into account different household and market characteristics. The lower two-fifths of the population could still be used as the cutoff points, but the actual amounts would vary by region. Table 7.1 shows the 20 and 40 percentile cutoffs in each province for homeowner households living in dwellings in need of major repair.

It is not known how many applications do not result in some form of RRAP assistance. An application may be rejected by the delivery agent because the dwelling is not eligible by virtue of its location or condition or because the available assistance is not sufficient to carry out all of the mandatory work and the household does not qualify for a repayable loan. An applicant may cancel his application because the work which he wants to do is not eligible or he cannot or will not assume a repayable loan.

These situations may result in the exclusion of households in need of assistance to carry out necessary repairs to their dwelling. Targetting the program to those in need will not show the desired results if the program design is creating these situations. Two program design features may be involved in reducing the

effective targetting of the program. These are the form of the assistance and the amount of assistance.

TABLE 7.1
20 AND 40 PERCENTILE INCOME CUTOFFS
HOMEOWNERS - DWELLINGS IN NEED OF MAJOR REPAIR

PROVINCE	20 PERCENTILE	40 PERCENTILE	N
NFLD.	\$7 877	\$12 431	330
PEI	9 527	14 213	144
N.S.	9 173	14 618	406
N.B.	8 600	13 457	410
QUE.	10 492	17 921	507
ONT.	13 868	23 639	716
MAN.	9 421	15 114	344
SASK.	9 260	14 778	404
ALTA.	13 572	23 148	319
B.C.	12 152	23 364	311
CANADA	9 966	17 106	3 891

Source: HIFE 1982

2. Form of the Assistance

RRAP assistance is provided to homeowners in the form of a loan, of which a portion, depending on income, is forgivable and does not have to be repaid. The remainder is repayable at market interest rates. The evaluation revealed that the repayable and forgivable assistance forms may not permit all households in need to benefit from the program. Where the amount of forgiveness is less than the cost of all of the mandatory work items and the household is unable to afford to assume any additional indebtedness in the form of a repayable loan, then the application must be rejected. Partial RRAP, where not all of the mandatory work is completed, though not permitted, was found to occur.

Many of the homeowner recipients of RRAP had significant amounts of equity in their dwelling. This has resulted from the combination of mortgage repayment and increasing property values. The evaluation found that over 85 per cent of recipients had equity equal to at least half of the value of the dwelling. This equity could represent a source of financing for the repairs.

Three problems exist which inhibit the use of this equity. The first is that many of these homeowners do not have sufficient income to enable them to make payments on a home equity loan. The second, and perhaps the most serious, is that many of these homeowners, particularly the senior citizens who have worked for many years to pay off the mortgage on their dwelling, are reluctant to take on a new mortgage commitment at this stage in their life. Third, many of these homeowners would be unable to find a lender willing to advance the funds required, especially in rural areas.

A deferred payment loan provides an option for homeowners who have sufficient equity in the dwelling but lack income for regular repayment. A deferred payment loan utilizes some of the available equity in the dwelling without creating undue financial burden on the household. Funds are provided to the borrower with repayment deferred until some future time. In some cases regular payments, for example interest only, would be made similar to an interest-only demand loan, while in others all payment would be deferred. The loan is secured by the value of the dwelling and a conservative maximum loan to value ratio of, for example, 50 per cent would minimize the risk to the lender.

Private lenders would be encouraged to provide deferred payment loans to RRAP recipients. Precedents exist in Canada where some municipalities defer property tax payments or care costs for senior citizens. Deferred payment loans are used for home repairs, usually for senior citizens only, in some areas of the United States. Where no private lender is available or willing to provide deferred payment loans, CMHC could act as lender of last resort. This might be required in rural and remote areas where all types of financing are more difficult to obtain.

From an administrative perspective, all legal and legislative requirements are in place to enable CMHC to offer deferred payment loans based on home equity to RRAP clients. A contract between the homeowner and CMHC would be required consistent with the approved program parameters.

A deferred payment loan program would permit more homeowners to make necessary repairs to their dwellings without increasing the demands on the subsidy budget. In practice, the model is far from simple. Not all of the equity in a dwelling could or should be utilized. Current legislation limits the maximum total loan to

value ratio and prudent lending practice would suggest further limitations for a deferred payment scheme. The determination of the maximum term of a deferred payment loan would be very difficult. Normally, a program of this type would be most appropriate for senior citizens as the payback time of the loan would be expected to be relatively short. Only 35 per cent of RRAP clients were senior citizens and no justification exists to limit the program to this group.

In rural areas equity in the dwelling can take on a different meaning. For homesteads, for example, which have been passed on from one generation to the next, with no monetary transfer, there would be no opportunity to recover the costs of a deferred loan. Similarly, the equity in the dwelling may offer little security for the deferred loan in rural and remote areas where no active real estate market exists.

Concerns have been expressed that homeowners, particularly senior citizens, may be unwilling to participate in a program which requires them to use some of the equity in their dwelling which they worked so hard to accumulate. The alternative, however, is to let their dwelling continue to deteriorate to the point where all of this equity is placed in jeopardy. In most cases it can be shown that the loan amount would represent only a small proportion of the total accumulated equity and that the rehabilitation would protect the value of the dwelling.

When a deferred loan is made to a younger homeowner, the determination of the term of the loan would be much more important as the loan could be outside of public accounts for a long period of time. One could argue that, as long as interest payments are being made, the problem is less severe. The designation of a maximum loan term may preclude this problem. However, in the absence of a suitable repayment method, the homeowner would likely be placed in extreme financial difficulty.

Many of these concerns could be adequately addressed in the design of a deferred payment loan program as a means of financing RRAP assistance. The parameters of such a scheme would have to deal with the requirements of different household types and particularly with households in rural areas. Any annual interest bearing program would not be of use to households who are already experiencing affordability problems but would be useful for households which have some additional resources available to put towards the repair of their dwelling.

3. Amount of the Assistance

For the recipients surveyed, RRAP provided loans of up to \$10 000 of which up to \$3 500 was forgivable¹. The evaluation revealed that, for most of these RRAP recipients, the maximum available forgiveness amount did not restrict their ability to complete all of the mandatory work. Of all homeowner recipients, over half (55%) did not use the maximum forgiveness for which they were eligible according to their adjusted family income.

The analysis also revealed that over half (51%) of all RRAPed dwellings still contained substandard mandatory items when inspected for the evaluation up to one year after being RRAPed. The occupants of these dwellings were not statistically different from those in dwellings with no outstanding substandard items except for two characteristics. As shown in Table 7.2, on average, they were eligible for slightly more forgiveness and they had received a slightly smaller RRAP loan. There was no statistically significant difference between the two groups for adjusted family income, actual forgiveness used, total cost of the work, gross debt service ratio and amount of equity in the dwelling.

A comparison of the unused forgiveness available to the recipient and the amount of incomplete repair work estimated by the inspectors reveals that one third of the homeowners with incomplete items had sufficient forgiveness available to cover the additional costs. More detailed analysis, shown in Table 7.3, shows that these were lower income households who had taken almost all of their assistance as forgiveness. The outstanding work was minor in nature with an estimated average cost of \$231.

¹ In 1982 the maximum forgiveness for homeowners was increased to \$5 000. RRAP for the Disabled provisions, introduced in 1984, provided an additional loan of up to \$3 000 and forgiveness of up to \$1 500 for work to improve accessibility for a disabled occupant. In 1984, the rural limits were increased to \$25 000 for loans, and \$5 000 to \$8 250 for forgiveness, depending on location.

TABLE 7.2
CHARACTERISTICS OF RRAP HOMEOWNER RECIPIENTS

	RRAP Homeowners		Signif
	No Incomplete Items (n=535)	Some Incomplete Items (n=515)	
Adjusted Family Income	\$10 247	\$10 862	ns
Maximum Available Forgiveness	2 951	2 789	*
Actual Forgiveness	2 485	2 379	ns
Actual Cost	4 065	4 235	ns
Total RRAP Loan	3 407	3 768	*
Estimated Cost of Outstanding Items	0	1 248	na
Gross Debt Service Ratio	20.7	21.0	ns
Equity in Dwelling	37 198	33 887	ns

Source: RRAP Physical Inspections 1982
RRAP Homeowner Survey 1982

* Significant at the 0.05 level.

Note: Current (1981) clients only
Forgiveness based on 1981 declared adjusted family income
and 1981 income and forgiveness limits.

TABLE 7.3
CHARACTERISTICS OF RRAP HOMEOWNER RECIPIENTS
IN DWELLINGS WITH INCOMPLETE ITEMS

	RRAP Homeowners with Incomplete Items		Signif
	Sufficient Forgiveness (n=159)	Insufficient Forgiveness (n=356)	
Adjusted Family Income	\$7 713	\$12 212	***
Maximum Available Forgiveness	3 484	2 489	***
Actual Forgiveness	2 464	2 343	ns
Actual Cost	2 594	4 946	ns
Total RRAP Loan	2 497	4 318	***
Estimated Cost of Outstanding Items	231	1 684	***
Gross Debt Service Ratio	23.2	19.9	ns
Equity in Dwelling	35 842	33 070	ns

Source: RRAP Physical Inspections 1982
RRAP Homeowner Survey 1982

*** Significant at the 0.001 level.

Note: Current (1981) clients only with substandard mandatory items in dwelling.
Forgiveness based on 1981 declared adjusted family income and 1981 income and forgiveness limits.

The households for which the unused available forgiveness was insufficient to cover the outstanding work had moderate incomes and had taken repayable loans in addition to the forgiveness. Their forgivable portion was, on average, equal to that of the lower income group. The outstanding work was estimated to cost \$1 684. There is no evidence to suggest that the clients with incomplete items were unable to undertake this work. They could use the available forgiveness and had GDS ratios, on average, which would permit the assumption of some repayable portion.

One explanation for this occurrence, that is, higher levels of incompleteness for households that had higher incomes and which took larger repayable loans, was examined. This suggests that, where homeowners were spending their own money in the form of a repayable loan, they were more interested in doing certain types of work other than the mandatory items. The RRAP inspectors and administrators might be less likely to insist that all mandatory items be completed before discretionary work was undertaken.

The only instances where the available forgiveness might be insufficient is in areas where costs, either materials or labour, are greater. This would apply for work to increase the accessibility for a disabled occupant and work in extremely remote areas. Both of these situations have been recognized in the 1984 program changes. The maximum available forgiveness has been increased by \$1 500 for disabled work and by up to \$3 250 for remote locations.

B. Rental RRAP

1. Targetting

The evaluation found that rental RRAP is not as well targetted to lower income households as was homeowner RRAP. Tenants in rental RRAP units were not necessarily those in the greatest need. This could be expected as there is no direct mechanism in the program design to direct rental RRAP funds to the lowest income tenants. In spite of this, the average income of tenants in RRAPed units was still significantly less than the average of all tenants in dwellings in need of major repairs.

Income testing of tenants would provide a means of improving the targetting of rental RRAP funds to lower income tenants. This would ensure that RRAP funds are directed to tenants in need of assistance. However, the assistance under RRAP goes to the owner of the property, the landlord, and not to the tenant. There would be no way of requiring tenants, who are not clients of the program, to submit to income testing. Directly assisting the tenants would overcome this problem but they have no legal right to undertake rehabilitation work on their unit. It is apparent that some proxy for tenant income represents the best practical solution.

The current design of the program attempts to use the area designation to identify tenants in need of assistance. The identification of designated areas uses both the incidence of dwellings in need of major repair and the incidence of low income (below \$13 000) households. However, significant improvement to this targetting mechanism can be achieved.

A more useful proxy for tenant income may be the rent paid for the unit. While there may not be a perfect relationship between income and rent, it is reasonable to assume that a general relationship exists. Some higher income tenants choose to rent lower priced or substandard units, but generally as rents decrease the incomes of tenants also decrease.

Rent levels could be used in two ways to direct assistance to lower-income tenants. First, a rent ceiling could be imposed which would limit assistance to units renting for less than a certain amount, for example average market rent. Second, the amount of available assistance could be based on the rent level, for example, maximum assistance at the lower end of market decreasing to no assistance at average market rent.

2. Rental Agreements

Regardless of the targetting method, one area where efficiency can be easily increased is in the enforcement of the rental agreements between landlords and CMHC. This would ensure that only allowable rent increases were permitted. However, the evaluation found that even these allowable increases caused affordability problems for some tenants.

The evaluation did not find evidence that serious tenant displacement problems appeared as a result of RRAP activity. However, it was not possible to track tenants who were displaced and to ascertain the cause of their displacement. RRAP assistance is received by landlords without any requirement for information on the profile of tenants, therefore no comparison can be made with the tenant profile after RRAP.

The design of the program, however, was not found to be a deterrent to displacement. The program control on rent increases through the rental agreements takes effect only after the rehabilitation costs have been included. Rental RRAP generated a landlord contribution, on average, of 2.58 times the amount of the forgivable

loan. Landlords invest substantial amounts towards the rehabilitation of their properties and expect some return on this investment. Overall, the average rent increase after RRAP was over 30 per cent. Tenants perceived these increases to contribute to affordability problems even though high levels of displacement were not found.

About 10 per cent of Rental RRAP properties were either occupied or sold by the owners after receiving RRAP. Although this is permissible, if the remaining forgiveness is repaid, these actions are not consistent with the program objective of providing safe and affordable housing for tenants.

C. Delivery

1. Designated Areas

In urban areas, only properties located within RRAP designated areas are eligible for RRAP assistance. The Capital Budget Control Plan is used to identify municipalities (Urban Priority List), and within these municipalities, neighbourhoods (Rehabilitation Delivery Schedule) having a high level of need for dwelling repair. Up to 10 per cent of a municipality's budget may be allocated to properties in greater need outside of designated areas.

The Capital Budget Control Plan ensures that RRAP funds are targetted to the neighbourhoods in Canada with the greatest concentrations of households with annual incomes below \$13 000 in dwellings in need of major repair. Although targetted to the worst neighbourhoods, the process excludes a substantial number of households and dwellings.

The rationale review of the role of government in rehabilitation indicated that, for equity considerations, all households meeting income and dwelling condition eligibility criteria should have equal access to the program. Other considerations, such as program efficiency, would influence this condition; however the evaluation did not find a significant efficiency barrier to extending geographic eligibility. No evidence of a substantial RRAP-induced effect on the generation of private rehabilitation activity in RRAP-designated areas was found.

Removing the geographical targetting of RRAP would ensure that all households which qualify for the program on the basis of household income and dwelling condition are eligible for assistance. In addition, this would reinforce the need to review the income eligibility requirements to ensure that the assistance was being directed to those most in need. Since some concentration of need does occur within the most seriously deteriorated neighbourhoods, interest in these areas would likely be greater.

The most serious consequence of the removal of geographic targetting would be the capacity of the delivery system to deliver the program on a universal basis. Municipal delivery agents would be required to deliver the program in currently designated and non-designated areas. The evaluation found that there appeared to be a minimum activity level required for effective delivery and for the maintenance of a delivery agent. Delivery agents, particularly municipal and regional governments, desired more control over the allocation of RRAP resources and delivery across their geographic area. In this manner, through a combination of resources, those in most need would be best served.

2. Delivery Fees

The evaluation found that the present delivery of RRAP by delivery agents acting on behalf of CMHC was satisfactory. While significant differences in the achievement of the program objectives and client satisfaction were observed among loans delivered by different types of delivery agents, the overall quality of the performance of all agents was high.

The analysis indicated that the current delivery fee structure may require some modification; however, the case study approach did not permit generalization to all delivery agents. The data showed that substantial variation existed in the costs incurred in delivering a RRAP loan. These differences were due to the amount of time spent per loan, transportation and salary costs, and number of loans delivered.

Changes to the RRAP delivery fee schedule were implemented in May 1985 based on the analysis undertaken during the evaluation. The new schedule incorporates a higher basic fee per loan. For loans which involve substantial amounts of travel, the delivery fee is increased based on the distance travelled.

D. Eligible Items and RRAP Standards

Under the current program design, an inspection of the property is carried out by the agent to determine the mandatory repairs which must be undertaken. If additional forgiveness is available after all mandatory work has been considered then optional eligible work may be included. The RRAP Standards serve as the basis for identifying the mandatory and optional work.

The evaluation found a high incidence of substandard elements after the RRAP work was completed. These substandard elements resulted primarily from incomplete RRAP work, that is, mandatory items which were not repaired with RRAP, rather than from poor quality work done by RRAP. On average, \$600 would be required to bring all elements in the dwelling up to standard condition. Over 30 per cent of homeowners in dwellings with incomplete items had enough available forgiveness to have undertaken all of this work.

Although available records do not distinguish between mandatory and optional repair items, the evaluation found that up to 20 per cent of the RRAP funds were being directed towards items which did not directly impact on the health and safety of the occupants and the useful life of the dwelling.

The program currently qualifies dwellings if there are substandard elements in any one of six basic areas. This may qualify dwellings which require only small or low cost, albeit critical, repairs. Once these mandatory items are included the rest of the applicant's available forgiveness can be directed towards optional items. Participation in the program is more attractive when additional non-essential repairs can be undertaken.

There is a need for clear guidance in determining standards for rehabilitation. The RRAP Standards represent a mix of eligibility criteria, performance standards, instructions and guidelines. In the present form, they can result in misinterpretation of permissible work and frequent conflicts between CMHC, delivery agents and clients.

There are a number of definitions of a mandatory item which could be used. First, a mandatory repair should restore a dwelling to a standard condition as defined in the RRAP Standards. It should not result in upgrading or modernization of the type of item, only of the condition. For example, cosmetic improvements would be permitted only as a result of a repair activity.

Second, a mandatory repair should address only elements of the dwelling which represent a risk to the health and safety of the occupants or the useful life of the dwelling. Ensuring the accessibility of the dwelling for a disabled occupant should be considered a mandatory item. Energy conservation activities could be considered mandatory only if associated with other mandatory repairs.

Two proposals can be considered to direct RRAP resources to mandatory work items which are related to health, safety and the extension of useful life. These are to limit eligibility to mandatory items only and to modify the RRAP Standards so that the distinction between eligible mandatory items and optional work items is clarified.

It is estimated that this proposal would free much of the 20 per cent of the RRAP budget currently being used for optional repair activities. With the removal of optional items, it is necessary to determine if there are not some basic mandatory items which the homeowner should normally be expected to undertake. In other words, should RRAP only fund the repair of major systems which the homeowner can not afford to undertake.

RRAP could simply disqualify all repair activities which are considered to be of a maintenance or minor repair nature. Under such a scheme, it would be difficult to include the financial capability of the homeowner in the determination of what is an eligible item. A second approach would utilize a basic deductible amount which would be contributed by the homeowner. The actual amount could be established with respect to different criteria, such as family size, location, income, cost of the work.

Any attempts to direct RRAP funds to specific items would have to be done in concert with modifications to the RRAP Standards. A modified version of the Standards would clearly identify mandatory items. These would be organized according to building elements and systems and include guidelines for determining the nature and extent of the work. Where possible, the Standards would take the form of prescriptive and performance criteria. Even with modifications to the Standards, the key component in the effective targetting of RRAP resources to mandatory items is the skill of inspectors and delivery agents in interpreting and applying the standards to RRAP properties.

E. Relationship with other Programs

RRAP recipients are encouraged to utilize other assistance programs in addition to RRAP. Over 50 per cent of all RRAP recipients, both homeowner and rental, also used another program. Of these, three quarters were CHIP, the federal insulation upgrading program. Other programs used were provincial energy conservation programs, provincial rehabilitation programs and provincial accessibility programs.

These programs were not entirely useful in contributing to the achievement of the RRAP objectives. While they may have caused additional work to be done, for example energy conservation activities, most of this would not be to rehabilitate substandard elements of the dwelling. Also, most of these programs require some contribution from the owner and would be limited in their ability to reach those households most in need of assistance.

The only cases of demonstrable advantages were programs which provided additional subsidy dollars for rehabilitation activities such as the stacking programs in Quebec. These resulted in better performance of the program on all measures of dwelling quality, completeness and client satisfaction. They also enabled the program to reach more households with lower incomes. For these reasons, stacking of provincial programs which extend the amount of assistance for households most in need of assistance should be encouraged.

The federal government has announced the termination of the heating oil substitution and residential insulation upgrading programs COSP and CHIP. The conservation impetus of the oil crisis has reduced and the energy efficiency of much of the existing housing stock has been increased. RRAP recipients made extensive use of these programs and their absence will put pressure on RRAP to support energy conservation work.

There are two approaches to energy conservation work which could be taken for RRAP. The program could be extended to cover all energy conserving activities. While not directly linked to dwelling quality or health and safety, these activities are recognized as providing operating cost savings which would be passed to the occupants. However, RRAP is intended to be a repair rather than an upgrading program. To be consistent with the program objectives, RRAP should assist in energy conservation work, such as adding insulation or converting heating systems, only when these systems are in substandard condition. It would not be consistent to allow functioning components to be replaced solely for the purpose of increasing energy efficiency.

VIII. CONCLUSIONS

THERE IS A CONTINUING NEED FOR REHABILITATION OF THE EXISTING HOUSING STOCK

Over one million dwelling units or 13 per cent of all units in Canada were rated in 1982 by their occupants as being in need of major repair. A further 1.25 million units or 15 per cent were rated as being in need of minor repairs. While three quarters of all dwellings in need of major repair are in urban areas, the incidence of need is greater in rural areas.

Estimates of future need suggest a modest short term decrease in the number of dwellings in need of major repair followed by a substantial increase towards the end of the century, as the current stock of dwellings ages.

THERE EXISTS A ROLE FOR GOVERNMENT IN THE REHABILITATION OF EXISTING HOUSING

The role for government in the rehabilitation of existing housing is based on efficiency considerations. Existing data shows that, as income decreases, generally a household pays a higher proportion of their income for shelter. Less is left over for other expenditures including necessary repairs to maintain their homes. Lower income households, who are required to contribute more of their resources towards shelter, are least likely to be able to afford to undertake normal maintenance and repairs.

Many of the low-income households in need of assistance would be among the potential target group for some form of social housing assistance. A rehabilitation program such as RRAP, which extends the useful life of an existing dwelling, represents an alternative to existing social housing programs involving long-term subsidy costs.

RRAP ASSISTANCE IS TARGETTED TO HOUSEHOLDS IN NEED OF ASSISTANCE

Homeowner RRAP is well targetted to lower income households. On all measures used, RRAP homeowner recipients are worse off than the general population living in dwellings in need of major repairs. They have lower incomes, higher gross debt service ratios and less wealth (accumulated equity) than do their general population counterparts. A RRAP homeowner was 2.5 times more likely to live below the poverty threshold. However, below the poverty line, RRAP was not as successful in reaching the lowest income households. RRAP homeowner households below the poverty line had a higher average income than did all homeowner households below the poverty line.

Rental RRAP is not as well targetted to lower income households as is homeowner RRAP. However, the average income of tenants of RRAPed units was \$3 500 less than that of the general population of tenants in dwellings in need of major repairs.

RRAP IMPROVES THE QUALITY OF SUBSTANDARD HOUSING

RRAP results in the improvement of dwelling units which were substandard in at least one major item or system. However, significant numbers of RRAPed dwellings still contained a substandard mandatory item after RRAP. Over half of homeowner units and 40 per cent of rental units fell into this category.

The majority of these substandard items were a result of incomplete work, that is, no work was done on these items at the time of RRAP. In most cases these items do not represent serious threats to the health and safety of the occupants or the useful life of the dwelling. The average cost to bring all outstanding substandard items up to standard was estimated to be \$650 per unit. Units in Quebec, both homeowner and rental, exhibited significantly lower incidences of both substandard and incomplete items.

RRAP WORK IS OF ACCEPTABLE QUALITY

The vast majority of repairs undertaken through RRAP met acceptable quality standards of workmanship and materials. Poor quality workmanship rather than inappropriate materials was the main cause of poor quality work. No relationship was found between the presence of work quality problems and the use of sweat equity by the property owner. Over three-quarters of RRAP clients indicated that they were satisfied with the quality of the work done through RRAP.

RRAP WORK EXTENDS THE USEFUL LIFE OF THE DWELLING

RRAP resulted in a significant improvement in overall dwelling quality. However, a significant portion of RRAPed dwellings contained at least one substandard item related to the continued useful life of the dwelling. These were found to be primarily due to the absence of RRAP work to the item. No difference was found between urban and rural cases. The condition of dwellings RRAPed recently was not different than that of dwellings RRAPed up to seven years previously indicating that RRAP was standing up to some proof of time.

RRAP PROMOTES AN ACCEPTABLE LEVEL OF DWELLING MAINTENANCE

The maintenance practices of occupants of RRAPed dwellings were rated highly by the inspectors. The overall incidence of poor quality maintenance practices was less than 15 per cent. No direct link was found between the implementation of Maintenance and Occupancy Standards by municipalities and the requirement for M&O Standards as a condition of participation in the program.

THE RRAP INCOME LIMITS DIRECT ASSISTANCE NATIONALLY TO LOW AND MODERATE INCOME HOUSEHOLDS

The RRAP income limits direct assistance nationally to households in the lower two fifths of the population of households in dwellings in need of major repair. In urban areas the limits are more restrictive, that is, a smaller proportion of households fall below the limits. The opposite occurs in rural areas. Regionally, the limits do not treat households in the same manner; they are less restrictive in all provinces except Ontario.

THE RRAP STANDARDS IMPACT ON THE ACHIEVEMENT OF THE HOUSING QUALITY OBJECTIVES OF THE PROGRAM

The design of the RRAP Standards was found to be potentially linked to the incidence of substandard and incomplete items after RRAP. The inclusion of optional non-essential repairs at the expense of mandatory items could account for some of the incompleteness. Elements for which the repair/replace decision can be difficult to make exhibited the highest incidences of substandard ratings after RRAP. Confusion or deficiencies in the specification of performance criteria on a dwelling element basis is a potential contributor to dwelling quality problems.

HOUSEHOLDS WITH DISABLED PERSONS ARE REPRESENTED AMONG RRAP CLIENTS IN PROPORTION TO THEIR PRESENCE IN THE GENERAL POPULATION

Provisions for RRAP for the Disabled were introduced in 1981. By 1983 the disabled were being served nationally under the program in proportion to their presence in the general population. The disabled were under-represented in Newfoundland, Prince Edward Island, New Brunswick and Saskatchewan, and over-represented in Ontario, Manitoba and British Columbia.

THE QUALITY AND COMPLETENESS OF REPAIRS AND SATISFACTION WITH THE PROGRAM ARE SIMILAR FOR DISABLED AND NON-DISABLED RRAP CLIENTS

No significant differences were found between disabled and non-disabled cases on measures of dwelling quality and completeness. Disabled clients were found to be less satisfied with the delivery of RRAP, however the client survey data does not fully represent the implementation of the RRAP for the Disabled provisions and the increased assistance amounts for disabled access work.

THE CAPITAL BUDGET CONTROL PLAN HAS ENSURED THAT AVAILABLE RRAP RESOURCES ARE ALLOCATED IN A MANNER MORE CONSISTENT WITH NEED FOR REPAIR

The introduction of the Capital Budget Control Plan in 1980 has resulted in a gradual improvement in the targetting of Urban RRAP funds on the basis of need between 1979 and 1983. Rural RRAP funds were allocated fairly closely to repair need throughout the same period. In terms of the total RRAP budget, little change is evident in the alignment of the budget with repair need on an urban/rural basis. It is obvious that it is difficult to establish program resource allocations solely on the basis of the proportion of need for repair.

THE TYPE OF DELIVERY AGENT AFFECTS THE ACHIEVEMENT OF THE PROGRAM OBJECTIVES

The evaluation found that program delivery was affected by the type of delivery agent. In particular, where the program was delivered by private firms, regional and provincial agencies and, to a lesser extent, municipal agencies, both dwelling condition and client satisfaction were rated higher. Loans delivered directly by CMHC offices and by native organizations consistently resulted in poorer dwelling condition and satisfaction, on most indicators measured. The poorer performance for these agents can, in part, be explained by the generally worse circumstances (condition, location, income) associated with these loans.

SUBSTANTIAL VARIATION EXISTS IN THE COSTS INCURRED IN DELIVERING RRAP AND THIS SUGGESTS THAT THE CURRENT DELIVERY FEE STRUCTURE AND ADMINISTRATIVE ARRANGEMENTS REQUIRE REASSESSMENT

The analysis indicates that the current delivery fee structure may require some modification. However, the case study approach does not permit generalization to all delivery agents. The data shows that substantial variation exists in the costs incurred in delivering a RRAP loan. These differences are due to the amount of time spent per loan, transportation and salary costs, and number of loans delivered.

THE PROPORTION OF RRAP LOANS AND THE ACHIEVEMENT OF PROGRAM OBJECTIVES IN REMOTE AREAS IS COMPARABLE TO THAT IN NON-REMOTE AREAS

Remote areas are slightly under-served by the program in proportion of their population. This is particularly evident in Quebec and British Columbia. For those dwellings in remote areas which were RRAPed, the quality of the work was comparable to that in non-remote areas. Remote clients were generally

satisfied with the program, however, they were less satisfied with the helpfulness of the inspectors and the speed in processing their loans.

REHABILITATION ACTIVITY IN TOTAL IS NOT GREATER IN RRAP DESIGNATED AREAS THAN IN COMPARABLE NON-DESIGNATED AREAS

No evidence was found to prove that RRAP creates a "contagion effect" within the designated area; that is, that the existence of RRAP encourages property owners to rehabilitate privately. In fact, significantly less private rehabilitation was found to occur in RRAP areas than in comparable non-RRAP areas. However, RRAP recipients did rate their housing condition and neighbourhood quality very positively.

EVIDENCE OF RRAP INDUCED DISPLACEMENT WAS NOT FOUND

Analysis of Census mobility data for 1981 and 1971 revealed that the mobility rates in RRAP areas were not significantly different than the rates in comparable non-RRAP areas. In the RRAP Tenant Survey, one quarter of the respondents were new tenants within the preceding year. This is less than the annual mobility rate of 30 per cent for all Canadian renters.

RRAP HAS BEEN SUCCESSFUL IN THE CREATION OF JOBS FOR THE RENOVATION INDUSTRY

RRAP is an effective generator of jobs accounting for over 7 000 jobs in the rehabilitation industry in 1984. In some regions the impact is as high as 20 per cent of the total employment in rehabilitation. Rental RRAP is the more effective job creation tool as it results in private expenditures of \$2.58 for each \$1 of public funds, as compared to \$0.25 for homeowner RRAP.

RRAP IS MORE EFFECTIVE WHEN COMBINED WITH PROVINCIAL PROGRAMS WHICH PROVIDE ADDITIONAL ASSISTANCE TO PROPERTY OWNERS FOR REHABILITATION ACTIVITIES

RRAP encourages the property owner to use other rehabilitation and related programs in addition to RRAP. Almost 50 per cent of RRAP homeowner clients reported having used another assistance program in addition to RRAP; three quarters of these used CHIP, 20 per cent used COSP and 12 per cent used a provincial program. Of landlord clients, 42 per cent used other programs; over half of these CHIP, 28 per cent CHOSP and 25 per cent a provincial program.

On measures of dwelling condition, completeness and client satisfaction, few differences were found between cases using RRAP only and those using RRAP plus some other program. Specifically, lower income households were better served by RRAP

alone as most other programs required additional financial contributions. The provincial stacking program in Quebec, the dominant provincial program used, provided additional subsidy assistance and allowed lower income households to benefit.

RRAP HAS CONTRIBUTED TO THE IMPROVEMENT OF ENERGY EFFICIENCY BY SUPPORTING ENERGY CONSERVATION ACTIVITIES

RRAP has had a strong impact on promoting energy conservation, both alone and when stacked with other energy conservation assistance programs. Over 85 per cent of RRAP recipients did some sort of energy conservation work. Over three-quarters of this work was funded through RRAP. Energy related work done through RRAP was rated highly on measures of quality of workmanship and materials.

APPENDIX I

DATABASES USED IN THE EVALUATION

A. RRAP Databases

One of the main data sources used in this evaluation is a complex database containing information from three related sources: the RRAP Client Surveys, the RRAP Physical Inspections and the RRAP Administrative Data.

Three populations were aimed at in the process of data collection. These were:

1. The "current" cases of RRAP loans approved in 1981, the year the data collection plan was initiated.
2. The "historical" cases of RRAP loans approved between 1975 and 1979.
3. The "new tenant" cases of occupants of Rental RRAP units approved in 1983, used to overcome problems of low response rate on the 1982 survey of tenants of RRAPed units.

Within these two populations, four important program components were recognized: Rental RRAP, Rural RRAP, Urban Homeowner RRAP and On-Reserve RRAP. The sample was drawn randomly from the RRAP Administrative Database which contained a record of all approved loans since the inception of the program. A simple, stratified random sample was used. The strata were defined, as shown in Table A.1, on the basis of program components, historical and current timeframes, geographic divisions and population size. Sample sizes were calculated on the basis of:

1. A binomial distribution with maximum variance;
2. A 95 per cent confidence level;
3. 10 per cent margins of error (7 per cent and 6 per cent for certain larger strata); and
4. An anticipated response rate of 80 per cent in the current sample and 60 per cent in the historical sample.

The same samples were used for both the RRAP Client Surveys and the RRAP Physical Inspections. In the case of Rental RRAP cases, both the landlord and a tenant were sent a survey questionnaire. The sample for the 1984 tenant survey was a simple random sample of the universe of 1983 Rental RRAP loans.

Two types of measures were made for each sample case. An opinion and fact-oriented self-completed questionnaire (RRAP Client Survey) would provide general information about the client and unit characteristics, the occupant's rating of the physical condition of the dwelling, the client's assessment of the program and some idea of the energy conservation practices of the occupants.

An on-site physical inspection of the dwelling unit (RRAP Physical Inspection), carried out by a professional inspector, would provide detailed information on the physical condition of the dwelling, an assessment of health and safety hazards and an assessment of the useful life of the dwelling. For the historical sample units, an assessment of the maintenance practices of the occupants was also included. A copy of the homeowner questionnaire and historical sample physical inspection schedule are included in this appendix. The complete instrument package is available in a separate Technical Appendix which is available from the Program Evaluation Division, CMHC.

Table A.1 also shows the response rates for each substratum, for each data source and where both survey and inspection were successfully completed. Response rates were lower than expected, particularly from tenants. This led to the preparation of a new tenant sample, from the 1983 Rental loans, for a separate survey in 1984. The response for this survey was sufficient for analysis purposes. For homeowners and landlord in the original survey, the response rates were sufficient to be representative of the population after weighting.

Because response rates varied considerably from substratum to substratum, and because overrepresentation of small substratum was built into the sample design, it was necessary to apply weights to each substratum in order to replicate the substrata distribution known to exist in the population. The weights are also reported in Table A.1.

The weights were calculated in order to make the following groups internally representative:

1. Current versus historical samples.
2. Rental versus homeowner groups.

Consequently, no data processing was possible which grouped either the two chronological samples or the two tenure type sample together.

TABLE A.1
POPULATION SIZES, SAMPLE SIZES, RESPONSE RATES AND WEIGHTS

Sample Current	STRATA	SUBSTRATA	POPULATION (1)			SURVEYS			INSPECTIONS			SURVEYS AND INSPECTIONS		
			N	p	N	r (2)	p	weight (1/N)	r	p	weight	N	r	p
Rural	Rural	Mid.	1309	0.049	123	0.59	0.057	0.861	0.90	0.062	0.799	69	0.56	0.063
		PEI	874	0.033	118	0.58	0.055	0.800	0.91	0.059	0.553	65	0.55	0.059
		NS	1712	0.064	125	0.67	0.067	0.965	0.94	0.066	0.903	75	0.60	0.068
		NB	2463	0.093	165	0.55	0.072	1.282	0.69	0.063	1.464	82	0.50	0.075
		Que.	7667	0.288	230	0.61	0.111	2.594	0.83	0.106	2.720	124	0.54	0.113
		Ont.	310	0.012	99	0.71	0.056	0.210	1.18	0.065	0.180	63	0.64	0.057
		Man.	286	0.011	97	0.62	0.044	0.226	0.85	0.046	0.236	43	0.44	0.039
		Sask.	663	0.025	114	0.62	0.056	0.442	0.89	0.057	0.440	65	0.57	0.059
		Alta.	313	0.012	99	0.53	0.041	0.285	0.73	0.040	0.295	47	0.47	0.043
		BC	1352	0.051	123	0.57	0.056	0.915	0.84	0.057	0.809	60	0.49	0.055
Rental	Rental	Atlantic	500	0.221	109	0.25	0.252	0.878	1.05	0.248	0.894	26	0.24	0.265
		Quebec	1123	0.497	155	0.22	0.318	1.565	0.91	0.307	1.623	34	0.22	0.347
		Ontario	313	0.139	99	0.21	0.196	0.706	1.03	0.222	0.625	18	0.18	0.184
		Prairies	225	0.100	90	0.17	0.140	0.711	0.56	0.109	0.917	11	0.12	0.112
		BC	97	0.043	63	0.16	0.093	0.460	0.84	0.115	0.373	9	0.14	0.092
Urban HD	Urban HD	Atlantic	2203	0.083	163	0.63	0.082	1.013	0.92	0.083	0.995	88	0.54	0.080
		Quebec	796	0.030	117	0.54	0.050	0.598	0.72	0.047	0.642	50	0.43	0.045
		Ontario	874	0.033	118	0.72	0.060	0.487	0.95	0.062	0.529	75	0.64	0.068
		Prairies	2412	0.091	164	0.66	0.087	1.048	0.77	0.071	1.287	91	0.55	0.083
		BC	2173	0.082	163	0.60	0.078	1.050	0.90	0.082	1.002	88	0.54	0.080
On-Reserve	On-Reserve	75-01 to 76-06	1173	0.064	122	0.18	0.017	2.525	0.52	0.036	1.242	15	0.12	0.044
		76-07 to 78-05	982	0.126	159	0.11	0.220	0.575	0.43	0.259	0.488	15	0.09	0.254
		76-06 to 78-12	4676	0.601	173	0.17	0.354	1.698	0.51	0.338	1.775	16	0.09	0.271
		76-06 & before	2127	0.273	164	0.21	0.427	0.640	0.63	0.403	0.678	28	0.17	0.475
		Since 76-06	3510	0.085	172	0.40	0.238	0.356	0.51	0.231	0.367	47	0.27	0.235
Rural	Rural	76-06 & before	20899	0.504	230	0.41	0.332	1.518	0.57	0.367	1.451	66	0.29	0.330
		Since 76-06	680	0.016	153	0.34	0.182	0.090	0.44	0.178	0.092	41	0.27	0.205
			16357	0.395	229	0.31	0.248	1.509	0.40	0.244	1.617	46	0.20	0.230

1. Proportions and weights are calculated to recalibrate survey and inspections independently, current and historical samples independently, homeowners and renters independently; landlords excluded.

2. Response rate

B. Survey of Household Income, Facilities and Equipment - Micro Data (HIFE 1982)

One very important source of data used in this evaluation was the Household Income, Facilities and Equipment Micro Data File, version 1982. This file is the result of a link of four surveys conducted by the Consumer Income and Expenditure Division of Statistics Canada. These are:

1. Household Facilities and Equipment Survey, May 1982
2. Labour Force Survey, April 1982
3. Survey of Consumer Finances, April 1982
4. Rent Survey, April 1982

The sample employed for these surveys was the Labour Force Survey sample. It is designed to represent approximately 98 per cent of the population. It excludes residents of the Yukon and Northwest Territories, Indian Reserves, military barracks, institutions and households living in collective-type dwellings.

The final sample size is 35 595 cases (unweighted). The data were collected by interview, either telephone or personal. The response rates are 77.5 per cent for complete information and 18.1 per cent for partial data. Imputation procedures were used according to dwelling type, building age, tenure, household size, settlement size, province and income groups; the information donor was selected on a geographically-nearest basis.

C. Survey of Family Expenditures (FAMEX 1982)

The Canadian Family Expenditure Survey was carried out by Statistics Canada in February and March 1983 and refers to the calendar year 1982. It is designed to provide information for families and unattached individuals living in private households in the ten provinces as well as Whitehorse and Yellowknife. The data source includes information concerning the household characteristics, location, housing and expenditures.

FAMEX uses a multistate stratified clustered sample selected from the Labour Force Survey sampling frame. The data was collected by personal interview. The final sample size was 10 938. No information was provided by Statistics Canada about response rates or other methodological details.

D. Ottawa Pilot Study of House Condition

In 1979, CMHC and the U.S. Department of Housing and Urban Development agreed to undertake parallel research projects in order to generate improved methodologies for assessing physical house condition, rehabilitation need and rehabilitation costs. The Ottawa Pilot Study was the Canadian part of the research.

The study was undertaken by Ekos Research Associates. A physical inspection of each dwelling unit was carried out by a trained inspector and by an interviewer who also administered a personal interview of the occupant. Completely drawn in the Ottawa inner city, a replacement sample of 500 cases was used. The data were collected during the fall of 1980.

E. Social Change in Canada

Social Change in Canada is a survey undertaken by the Institute for Social Research (ISR) at York University. The research was supported by a grant from the Social Science and Humanities Research Council of Canada.

The survey collected information on attitudes and perceptions and addressed a variety of subject areas such as neighbourhoods, cities and towns, province and country, politics, quality of personal life, goals and values, education, leisure, housing, views of life, friendship, marriage and family. For purposes of the RRAP Evaluation, the questions concerning housing and neighbourhoods were of greatest interest.

The survey was national in scope and randomly sampled 3 953 Canadians. The questionnaire was administered by personal interview from April to June 1981.

The data files were made available to the evaluation team by the Institute for Social Research. Neither the principal researcher nor the disseminating archive at ISR are responsible for the interpretations presented in the RRAP Evaluation Report.